TAPR Weather Special Interest Group Archive, February 2000 through December 2000

February 2000 through December 2000

TAPR's forum for amateur-radio weather-station hardware and software, including the T238 and T238+ systems, 1-Wire sensors, APRS weather transmission, firmware, construction, calibration, data logging, and station troubleshooting.

This volume contains 11 original monthly files and 1,122 messages, arranged chronologically. The PDF is a readable access copy: MIME transfer encodings are decoded, HTML bodies are converted to plain text, and non-text attachments are represented by descriptive notes. The raw source text is supplied separately with the Internet Archive item.

Month	Messages	Original source file
2000-02	1	wxsig.0002
2000-03	119	wxsig.0003
2000-04	113	wxsig.0004
2000-05	95	wxsig.0005
2000-06	85	wxsig.0006
2000-07	114	wxsig.0007
2000-08	218	wxsig.0008
2000-09	136	wxsig.0009
2000-10	58	wxsig.0010
2000-11	107	wxsig.0011
2000-12	76	wxsig.0012

February 2000

Original source file: wxsig.0002
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0002

1. [wxsig] TEST 3

```
From: Greg Jones <wd5ivd@tapr.org>
Date: Thu, 24 Feb 2000 18:07:39 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-67814-2000.02.24-18.05.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
TEST 3
-----
Greg Jones, WD5IVD                Austin, Texas
wd5ivd@tapr.org      http://www.tapr.org/~wd5ivd



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

March 2000

Original source file: wxsig.0003
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0003

1. [wxsig] Welcome Beta Testers!

From: "Steven R. Bible" <srbible@gate.net>
Date: Wed, 15 Mar 2000 21:43:41 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71361-2000.03.15-20.42.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Welcome T238 beta testers. I've added Aaron and Brian to the list of beta testers. You are the first two of a total of ten that will be participating.

This is a closed list. On it are beta testers and the designers. When the T238 is no longer beta, we'll open the list for anyone to join and this will become the list for open discussion of the T238 when it becomes a production kit and amateur radio related weather topics (all not necessarily T238 specific).

On my to do list are to order LCDs for the beta kits. I have all the parts with the exception of the LCDs. At this time we are trying to find a reliable and low cost source of 20x4 LCDs with LED backlight. If you know of a source, please let us know.

I have a sample of an extended temperature version from B.G. Micro that is real nice. The issues we are trying to resolve are the negative voltage required for contrast adjustment and coming up with a 1x14 pin connector for the LCD.

If you have any questions, this is the place to ask. Please make yourself right at home, cause if you don't, no one else will :-).

73, Steve N7HPR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] Welcome!

From: William Beals <wmbeals@compuserve.com>
Date: Wed, 15 Mar 2000 21:41:40 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71389-2000.03.15-22.36.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Welcome! A short introduction. I'm Will. I'm the guy who did the schematic and does the software. I'm the engineer who gets to play with the fun stuff while Russ makes sure I do it right and does an excellent job of communications and evangelizing.

If you havn't visited the website, it is http://ourworld.compuserve.com/homepages/wmbeals. In there is a (slightly) longer introduction, but more importantly, a hopefully respectable introduction to the weather controller. This is my first ever website creation (of two!), so it isn't terribly fancy, but hopefully it gets the needed information across.

For the most part I put new software releases up on the website and just announce them on the reflector. If you would really prefer to have the object file mailed to you, please let me know and I'll send them out directly. Zipped up source is up on the website too.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place

Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Interface - odds n ends

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Thu, 16 Mar 2000 00:27:18 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71404-2000.03.15-23.26.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am looking forward to the interface for the one-wire ... I guess I will be
the guy who gets to check out the KPC-3+/v8.3 GPS port with the weather
station interface.

In view of the weather up here on my mountain (I live at 1500+ feet on
western slope of Mt Mansfield, about 18 miles East of Burlington, VT and
Lake Champlain) I will also probably be able to tell you approximately at
what velocity the wind cups departed for parts unknown ... we get sustained
wind gusts well over 100 kph here. If there is an upper limit to this baby,
I almost sure to be the first to find out!

The other aspect of the project that draws my keen interest is that my home
is totally off-grid and as such running a computer 24/7 is something I would
prefer not to do ... low power apps to this stuff is of essence

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] Re: Welcome Beta Testers!

From: "Aaron" <ae4ko@amsat.org>
Date: Thu, 16 Mar 2000 08:58:53 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71448-2000.03.16-07.57.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 15 Mar 2000, at 21:43, Steven R. Bible wrote:

> Welcome T238 beta testers. I've added Aaron and Brian to the list of beta
> testers. You are the first two of a total of ten that will be
> participating.
> This is a closed list. On it are beta testers and the designers.

My First Question: I don't see the wx-list on the tapr web pages,
even as a private list. Is there another way to get to the archive?
(or has it been archived?) I would like to peruse some of the recent
history. No big deal if not.

> On my to do list are to order LCDs for the beta kits. I have all the parts
> with the exception of the LCDs. At this time we are trying to find a
> reliable and low cost source of 20x4 LCDs with LED backlight. If you know
> of a source, please let us know.
>
> If you have any questions, this is the place to ask. Please make yourself
> right at home, cause if you don't, no one else will :-).
>
> 73, Steve N7HPR

I personally am not aware of any good sources of LCD's. Other
than the normal source of digikey, etc. which are not inexpensive,
and the hobby mags ads which I am leery (but have no experience
to back that judgement).

My Second Question: As some (or all) of you know, Dallas has
come out with a "better" temp sensor (DS18S20). Has anyone
modified their kit? I just received a shipment of replacements, but
haven't done anything yet.

73
ae4ko
Aaron

(Random Quote)
C code. C code run. Run code run! Aw come on code! RUN!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

5. [wxsig] Re: Welcome Beta Testers!

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Thu, 16 Mar 2000 10:41:13 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71464-2000.03.16-09.40.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/16/00 8:58 AM, Aaron at ae4ko@amsat.org wrote:

> On 15 Mar 2000, at 21:43, Steven R. Bible wrote:
>
>> Welcome T238 beta testers. I've added Aaron and Brian to the list of beta
>> testers. You are the first two of a total of ten that will be
>> participating.
>> This is a closed list. On it are beta testers and the designers.
>
> My First Question: I don't see the wx-list on the tapr web pages,
> even as a private list. Is there another way to get to the archive?
> (or has it been archived?) I would like to peruse some of the recent
> history. No big deal if not.

 I may be wrong, but the list is brand spanking new - no history to be
perused, save for what went on with the designers in what was probably
private correspondence.

>
>> On my to do list are to order LCDs for the beta kits. I have all the parts
>> with the exception of the LCDs. At this time we are trying to find a
>> reliable and low cost source of 20x4 LCDs with LED backlight. If you know
>> of a source, please let us know.
>>
>> If you have any questions, this is the place to ask. Please make yourself
>> right at home, cause if you don't, no one else will :-).
>>
>> 73, Steve N7HPR
>
> I personally am not aware of any good sources of LCD's. Other
> than the normal source of digikey, etc. which are not inexpensive,
> and the hobby mags ads which I am leery (but have no experience
> to back that judgement).

    MP Jones Associates <http://www.mpja.com> are one possible source. I am
not sure what they have current in LCD displays, bought some from them a
year ago.

> My Second Question: As some (or all) of you know, Dallas has
> come out with a "better" temp sensor (DS18S20). Has anyone
> modified their kit? I just received a shipment of replacements, but
> haven't done anything yet.

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
 For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

 "Give a man a fish and you have fed him for a day, but give him a case
  of dynamite and soon the village will be showered with mud and
  seaweed and unidentifiable chunks of fish." -Joe Chew

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] Re: Welcome Beta Testers!

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Thu, 16 Mar 2000 17:09:19 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71540-2000.03.16-18.08.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron wrote:

> My Second Question: As some (or all) of you know, Dallas has
> come out with a "better" temp sensor (DS18S20). Has anyone
> modified their kit? I just received a shipment of replacements, but
> haven't done anything yet.

I also received my replacement DS18S20 temperature sensors from Dallas Semiconductor today. I put the new sensor across the 1-Wire bus of a weather station that I have on the bench without removing the old sensor from the printed circuit board. Then I ran the set-up on the T238 and it found the new DS18S20 sensor. I knew that it found the new sensor because I could make the temperature rise by holding the new sensor in my hot little hand. Which sensor is found depends on the serial numbers and which one comes first in the search scheme that the T238 software uses.

Anyway, the T238 software seemed to work fine with this particular new DS18S20 temperature sensor. I only checked one.

On my outside wx station, I have removed the temperature sensor and have it mounted in a ventilated radiation shield. This is something that you can make out of just ordinary stuff that you can buy in any lumber yard. I'm working on the directions on how to build one and will post them in a few days. A radiation shield will signficantly reduce the error caused by the solar insolation on the DallasSemi wx station housing.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] Re: Welcome Beta Testers!

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Thu, 16 Mar 2000 19:41:59 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71562-2000.03.16-20.41.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:

> How did the software 'know' which sensor to take the data from? It was my
> understanding that every sensor IDs itself? did you re-run your setup
> routines? Doe the DS1820 and DS18S20 ID indentically .... just curious.

Each chip in the weather station has a unique 48 bit serial number and an 8 bit part number. At set-up the T238 goes through a binary search for each part number, including the temperature part number until it finds one temperature sensor and stops looking because there is only supposed to be one temperature sensor. Then every 5 seconds the software issues that serial number on the bus and the temperature sensor sends back the temperature. The second temperature sensor never hears its serial number and so never responds. And yes, I re-ran the set-up on the 50% chance that the new temperature sensor would be found before the old one.

Hopefully, I have most of this right. Will may have to correct me.

>
>
> I downloaded and printed almost everything from your website and I remember
> that the ideal mounting for a temp sensor is not way up where we have the
> wind stuff, but down much closer to the ground and out of the sun and wind
> ... Would it be appropriate to remove the DS1820 from the weather station
> housing and make a new mounting elsewhere (replacing with an DS18S20) and
> then run a twisted pair to a junction box and have it spliced to the pair
> going up to the wind sensors and then on into the shack and the T238?.
>

Yes, that is what I have done - remove the temperature sensor and remount it in a ventilated enclosure. You want the ventilated enclosure to be in the wind because that's what moves the solar generated heat away from the sensor. There is an additional issue with the optional third terminal on the temperature sensor (both DS1820 and DS18S20). It is to provide extra current during the data conversion after the serial number is received from the 1-Wire bus. The T238 has this voltage available if you have the right kind of cable between the RJ-11 connector and the temperature sensor outside.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] Some current hot issues from the developer reflector

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 16 Mar 2000 21:33:54 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71581-2000.03.16-22.41.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I'm moving some interesting issues we were dealing with in the other SIG over to this one as they are applicable to all:

I will post another email explaing some rework that will be needed if you want to do some of your own program development from scratch. This resistor is only required if you are going to mess with the Motorola development tools.

John discovered something I found out the hard way a while back. When you start with a brand new microcontroller or completely erase an existing one and start over, your sensor IDs get lost. In order to re-learn the sensor IDs, you need to rotate the wind vane in a particular way. If you weather station is up on a 20-foot high post, this can be a real pain to do. The solution is to use the downloader that uses the DOS shell program whenver possible. This downloader does not mess with your stored IDs and just downloads the new application. If you chose to erase the entire chip using the Motorola tools, FIRST READ YOUR IDS FROM THE MICRO AND SAVE THEM! The file wireids.asm defines where the IDs are stored in flash and in there is an example of where I read my IDs out and then put them into the source code so I won't have to re-learn the IDs on my outdoor sensor. My basic idea is that if you are bold/talented enough to use the development tools, this should be something within your grasp. If not, you have this reflector to ask.

My Peet format support in the 1.07.0 release currently runs at 9600 baud.
 Steve B tells me this must be 2400 baud. I will get this fixed shortly.
 Alas it is not as simple as changing the baud rate as I have a sequencer that fires off the UART data and the slower baud rate will likely cause some sequences to overlap data.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] Answers

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 16 Mar 2000 21:42:54 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71582-2000.03.16-22.41.19--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

All:

(I like to address all the daily issues in a single email as most folk want
to see the answers anyway)

Brian: The 8.3 TNC release will be interesting, I'm not sure how well I
will work on the secondary port since I have written everything assuming I
am on the primary port. I'm not too hopeful. Try the main port first!

Brian: A major goal of this project was to require a simple power source.
 My hope is to have some weather stations up in the mountains here in
Colorado that should only need solar power.

Aaron: I have my DS18S20s on order, I requested them a couple days ago
after getting reminded by Russ. Once I get them in I will see what it
takes to support them. Based on the writeup Dallas had, there will have to
be some changes as the new conversion time is up from 500ms to 700ms. Russ
says it works mostly, but I am pretty sure I'm violating a spec or two. I
will need to support both somehow.

Brian/Aaron: No idea on archives. I keep the stuff I've wanted, but have
been lucky enough to be in since the beginning.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] New Temperature sensor

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 16 Mar 2000 22:03:18 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71584-2000.03.16-23.01.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I downloaded the spec for the DS18S20. It does ahve the same ID as the
DS1820, so distinguishing them may not be trivial. I have utmost
confidence that Dallas has a nice way of handling this though.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Debugger rework

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 16 Mar 2000 22:09:44 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71586-2000.03.16-23.04.58--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

SPECIAL PROCEDURES FOR DEBUG SUPPORT ON THE T238:

(This needs to be in the operations manual and will get added when I get it back from Steve B.) The way we implement the VPP voltage on the T238 board does require a slightly different procedure compared to what the Motorola documentation suggests. The issue has to do with the presence of the VPP voltage to get the 6808 into debug mode when the reset vector is not blank. We generate VPP using the MAX-232 chip. This chip has a charge pump on it for RS-232 operations and we borrow that voltage rather than generating our own. This has the advantage of being very cheap (free), but has a drawback. The chip generates VPP from +5V and VPP lags VCC by about 2.5ms (see attached picture). Since VPP isn't at the required voltage right out of power-up, the 6808 does not go into debug mode on power-up. The 6808 must have power removed in order to get into debug mode. The solution for this problem is SW5. This switch removes power from the 6808 while still keeping power to the MAX-232 chip. This allows the 6808 to go through its normal power-up sequence and also have VPP ready right after it gets power. Note that this problem does not exist on a 6808 that does not have the reset vector programmed. The vector isn't programmed on a fully erased part or a part that has been programmed with the weather code with the DEBUG flag set.

SUMMARY: Whenver the Motorola documentation says to cycle power to the 6808, do this with SW5, not power to the entire T238 board.

The above explanation is a first draft that will hopefully make sense to you all. It could use some cleaning up and I'll get that done while Steve has control of the docs.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

begin 600 vpp.jpg
M_]C_X `02D9)1@`!`0```0`!``#_VP!#``@&!@<&!0@'!P<)"0@*#!0-# L+
M#!D2$P\4'1H?'AT:'!P@)"XG("(L(QP<*#<I+# Q-#0T'R<Y/3@R/"XS-#+_
MVP!#`0D)"0P+#!@-#1@R(1PA,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R
M,C(R,C(R,C(R,C(R,C(R,C(R,C+_P `1" '@`H #`2(``A$!`Q$!_\0`
M&P```04!`0`````````````````@`!`P0%!@?_Q !<$ `!`P,"! ,%! 0*! H'
M!@<!`@,1``0AC%$T%1!B)A%#)Q@9$C0J'1%5*QP0<6)#,T8G*2X?!#4X+2
M)51C<Y.BH[+"\1<U1(.SP],F-E5TE.)%9'6$I-3D_\0`% $!````````````
M`````````/_$`!01`0`````````````````````#_V@`,`P$``A$#$0`_`/+$
MW+6!S#4@NFMM9Q6,! IP?6@VA=-_KYZ48NF02>8:Q)%/B@VQ>L#[YFG%ZP)
M!6:Q09IQC-!M"^8GW_PIQ?6X,ZCBL09I`4&X;^V'WL_"B/$+;N9]16'&*48Q
M0;?Z1MU;_LI#B-N#DF/A6(9(S3@$30;8XG;>I^5(\38[&/A6)!I1Y=J#:_2C
M`5 !^E$>*L#8*GX5B$"E&(H-O]*L?JF/A2'%F(C2KZ5BC&V]./6@VAQ9G]17
MR%,>+L"(2KZ5C&-J4SB@VOTNS. J.GE_QI#B[.^E7T%8OS-/M,4&R>+,Q[BO
MI2/%V9)T*^@K&&:5!L_IAL3Y#]*7Z8:!]PCM6-@]\4\SUS0;/Z8:GW%;]J7Z
M8:_45]*Q@(-*`:#9_2[0!\A^E,>,-;:#\A6/%,1([T&U^EV1]U7TI?I=F3"5
M>DBL040SB@V?TNV9PJ/A2_2[`.RS\JQ0,Q3D"(H-O]+,SLN.\9I?I9@G*3]*
MQ#@12(Z=:#;_`$LQV)^5.>*L;PKZ5A['UIMS0;PXK;3/F,&,II_TI:^O]VL'
M$D=:6*#>'%+7(U$=L4_Z3ME9U''6*P!34'0CB=M'O_44OTG;_P"L@? US\=:
M:@Z0\1MI_G=Z<<0MX_G?I7-SD[TTQ@4'2^WV^8=_;-&F^;$0[\P3BN8WI@3/
M6@ZKVULB`]\BJG-X"(YN/C7*S2)QV'I0=6'DD$ZDTBMM1R$'XI%<I)&]/K5T
M.10=3]D3'*:).TH31 -3AAK^Z*Y4.*B-1^$TX><`PL@4'5 MS_,M_ #;\:8I
M:(_FT@^A/YURZ;EU/^D5%.F]> 'G,T'2%MK$ZA/]8T@RT<2L&,0NN=3?7 F'
M%"B'$;@#^=_"@WPTP,%3H)Z:A^5%R6S]]P8QM7/CB=T(\X/RHAQ6YQD?2@WB
MT@&>:O?$@10*9DREWKU3_C6-^F+@'IG?%(<9?_41\Q0;"F5D>523'<13<E8Q
MJ0?K^590XPY]Y /[:<<:(]YH1Z4&H&5$;HVC>F+2Q, 'YUG_`*9$Y08-..,-
MX!0<&@O\IV8T3\%"D6G!DMG':*ICC+),0KT$47Z5MR",S*"QRG G+2A\J$@
M@04$'^R:B3Q.W /F/8XHQQ-B00Y0+6/\B@*D]3\!4J;]F9YH@C]:B%XUE/-$
M1WQ05RH'J*0$S4XN6YG6C'PIRXR<#ED'/K052)R-OA3%,22 /A5N&5)'E3D]
MZC*6@8"1\C_C05M(D[8H3^%6BALG83\33%EN,_MH*I&YJ,C$U<#36Y*I]#0%
ME$SJ5%!BNV2DB4Y%5RA23D5NZ9D$XJ%RV0O&GX&*#(CUH@)JP[9K1)"214 !
M3N*!"GB:0';ZT\3-`P$&GWIXI?LH$-YI%)BEFG^)Q0*/PI8)VI1%/CZT#0:>
M),TXZ]!31VH&CO11\J0'K2Z=Z!$9I9I9BE0*>E/TZ4A)I1.^] @"32 BE%+X
MT".V]+I-./04HS0(3$33#ZTY$09S2]*!3Z4CWI#/QI3WH&WSUI12^6*0% X

```
MD3FE&13D4W2@5+_,TPWI\4"(S--&(FG^--M,4"C![T\;4MQWI9% M^E(#88I
M>FU(C(H&`G>GI1,12('^- LGX4P%%Z4Q]30([9I1VS333S0-'6G]#2I$^E T
M>E(].U.#2D':,T"R0=J;:GP>E,>\2:!1.XICOFG$&D:!=3FD1UIHQC:E/?Z4
M"B8[4Y I?YFD=J!IS,4NE+:EUB@49F*1';%(_A2/SH&@Q%,!C(I_C2/:@: >
ME,?@:(TWQ- T;XBF@@BBD;33=:!L4H).:1[?NI#'4T#$P1FD9I$#H:6":!I(
MZYI]:@=S3'TIMS0'S5C[QQZTX?=&0LCYU&0*1['84$OMCX `<,4_MMQ_K#Z8
MJ#;Z4V]!8]ON`GW^O:D.(O\`0_'%5MSBC2TKKM0;Q'Q'SHAT_?3CL31 "3/U
MH!*1F8)[56=M$.C;2>XJYI$T^GT,4&([:K;GJGN*B P16^I&K$?*LGB2`R0I
M*<DQ05OWT@,[U$5KZQ)'>G2M1WTT$@$2*?K0ZI'3Z4X5ZB@?J2!-.(,8I)(S
M) [8_P`:*$&/.1_L?XT#0:85(E*/US\D?XTXY1(\ZO[H_.@C)IOC4IY7=7]V
MGAN1!6<YP*"(4_7I4Y#!!@.'OL*8BWG"7(Z^8?E001'6GZQUJQIMU"$I>!Z>
M8?E3:&O^5_O)_*@@)FD3,58T,=.=@?K)_*FT,F(#D_VA^5!#D"F&:L%+,Y"_
M[P_*ERVH'D<G^V/RH((@]Z8DF#O5CELR/*LX_6'Y4N6T?]9$=Q^5!7VFGS/I
M4_+;!$Z_J!^ZF4EL]',?UA^5!!D4HP#%3@-=4K/IJ_PIPEJ3Y5X_KC\J" SW
MIB8%6"VP4GRN3WUC\J<(MQ'D<_OC\J"MTR:1R(C%6"FWS+;G]\?E1:+>(#;D
MS,ZQM]*"KTS2!@59TL)W0X1T(4!^ZFBW(!*7/3S#\J"N`<^E//UJ<^S@P4NP
M=_,G\J(IM <MO1TA8_*@JSZYIQ-3'V8&"EV/B/RI3;B2$N@=,C\J"$&-\4MO
MG4Q-O'^E'R%+^32?,[ _JC\Z"">M(R:F'L\X4Y']D?G0KY$84Y\TC\Z".#2^
M`'TIR6T]3]/\:;4GUH%2S$4VI,[XI]21/G3]#^5 T8QFG'XT@6B3]J)_LJ_*
MG)0<AQ,=X/Y4`P=J6QI%;8_T@]*;6V?OB?C0%!INL'M2"DQ[Z?K2P/O)^M X
MVINFU+X*'UIR.@- T$^L4OA3Z9[4^@^M`!,@TIDQ1 $3BEI-`U-!(!HM)(Z?
M6F@]J!HZ]!2FG(CI3''6@;UI$S&U*(/K2Z#\*!"F.](TB*!MZ8C$T_3UI1/P
MH! IXG,4N@BD9B@:(GK34_;I39_\Z!'.::G@G,T26R30`!)VHDM%1$U.AK;$
MFI-/I01)9">U2!/:B"<[9H@)Z?&@T@,R/QHTCI]*:.D429](]*!QYM^E( T1
M$]8IX.\T`[XZ165QD0@=1J&U; $C!K+XJG[&?ZW[J#$!,BC$GK4>RSBKEDTF
MXN6FE PM0!B@A$CI3@^N:U7K>RMV2\Y:WW*"RC7Y`)DCOZ&K]KP:U>NG+5ZV
MO+=26N:%.*3!$@1CKG\*#G 8J0=#75.>';!NW<<2EYQ2!(0'`G5]13<,X1PG
MB%DFYY3Z$J)2$EX3(([#UH.7ZBG&<5VP\-\)!RV]\.=_A3_Q=X/,!EXG_GC^
M5!Q$$4O0UWH\-\&(/\G>[?SYH_XM\#D1:/1UFX50<#!S`/I2^A[UZ /#? @!
M_(73(Q_*%_G1CPYP2!/#EI__`+A8G\:#SZ#C!H@<QUKMKWA?`>'(MG#P:[N4
MO/%HHMW5K7[BE2$SGW<YQOTI+X1PEBZ99NN!<H.NJMPI%TXX"Z$E1B8E&G[P
MS,B,&@XG)$S1!))'<YVKOCP'@@'_`*N,@'_VAS_>I?Q?X*"1^C_3+SH_\5!P
M)!$]Z?I'45Z ?#W!3@</B/\`EG/]ZA5X=X*D$#AX@9_GG/\`>H."S/H:6X&U
M=V> <) $</3L8^V<_P!ZA7P#@Y7CAHS,_:N?[U!PBCL(H)G;IZ;5WA\/<(,Q
M8 =@7'#T_M56N>%<,8XCPZS8X0PX[>%\!3MTZVE/+0%'(U;@]J#C`)^%$<R8
MZ5U35CPFX=2BVL^!W#J@2&FN,/+4<2<!$U-;\*X;<I>YG"FF5LOK96EM]Q:2
M4A)F3!Z]J#D0`([4Q(U#MUKJ_P!&62KYVUM>#V[BFVDN+6[>NM^\5 ``!7ZI
M[5*WPK@IMG'W[-#"675M.J4^O0A22 ?,2,28!('PH.1 D'Y4QQN*[9?!^!MV
MXNEM-(MBD*2\7U:""0`=6J.O>DYP?@3=K[2MII%M`5S57"@B#$>8JC,B@X<@
M3 G'>F@';>NR8L. 71>4U;H+0N3;,N(NE*#J@A*I&8^\<#M4_P"@>"!\M"S^
MT"=90+A<Z9B8U3'K0<,!N#OFA@F*[M?A[@Y$^Q.?],O\Z97A_@\%/L;D_P#/
MJV^M!PAR=Z8@CX5W:O#O!]Q:OCTYZJC/AKA'5A^20/YXT'#@1M3;]<GI7<_Q
M8X0!/*N/^F_PH#X9X650`^)C_2C'Q\M!Q6D=Z8@3B:[%7ACAQ@:[@ _UP?\`
MPU5N^ \+LFD/W%P^VRMU+>O!T2"23C8:30<L:&,FNFOO#_#^'V*[JZO7&T)$
M@:02LE)(`D#)B!5W^)%NIU*/TBXD**=V1B1/>@XLS3$3&:Z!GP\P_=J9#W$&
MD<U3*;EZR2EE:PHI@+UY)((&-ZN#P2"D*_2+G_Z8=O[5!R8!SFF4*ZW^) Z\
M26)__EAVG]>D?!(*DI_22I5&]L!O_MT''D ^M*/2NC;\,V[]Z+1KBZ5*(&EQ
M5N0A2L>4*U059V!G>BNO"HLF><]Q5A*)`RVHD],`2>WU%!SR4R,_MHM&TUT#
MOA?V>V%R]Q6Q;8,0XYK2,[?=HWO";ULVEZYXEPZW85&EYYQQ*%$B1!*.L4'-
M%(%,6QC&]=8KP-Q!*P/:K#S"00M9D?W*8^!.)[)N+ ]ASE#]J:#E.6GM3<L#
M_"NF<\%<61_Q51]'P)^HJ%SPEQ9K!994?ZMPC\Z#GM'8D?.D$D >90_VJVCX
M9XN ?Y',8\KJ#^^H5< XL#I/#;F>FE&J?I0986Z,\U7]XTN8Z#[YGUS6B>!<
M7 _]4<0)[BW5^5 >"\6D@\)XA('_`!5<_LH*/.>_6_ZH_*FYK@SJ_"KZN#<5
M2DE?"KX`=[98_=59=G=(]^V>3'ZS:A^Z@AYSD]/I2]I<3N$GY4EH4DPI)!B<
MXH)23 4)WB: C<N&?*GZ&E[2N(*$GX30ZD_U?C-*!B"#\Z O:3U2(^-(7(.Z
M#'QH--/HCI0'[0W$%"\TQ?1V5]*'33:8Z[4!%](!5F!1M+2[\ZKK3*55/9)S
M.PF@MI; %2:0-A1B!&"32&* 0(-$$TX'KBG!$=:!CMFG(C:GC'<T^-HH-$84
M?QFG'8QGI31 _?1)&>GSH' (.!@T4="*21^%..@F/G0-N('[:SN*IBV/?6/V
M&M/3@_OK-XK*;08W7GZ&@P8&H_&M+@R9XM;)B?.)K/TD$9WK5X"G7QFT2)RX
M-J#;\5B.#(/ZUPG,_P!51C]M2>(KYUCCMI8\UUNU<0EQQ3.K61J4(Q).W:KW
M%^"O\68;MTW+;#25!PA394HJ$C]88R?I3\3X7K?9XQ<7S=O<V: %K#*E-:02
M?<!U#)[T%+AKUTIWBC17<N6B$ZF5W"5!4$9RH"?I5'@_$;9KP_PZP<>=8-P^
MO7<#4@-@*2<*C)5&F0?+N:O-\5L$HNN=XE=>>N1I',M'U--@_J(.0?G\JB;_
M`$ GP^>#W/%0^A)5R'D\->0ME9.<F9R!@1U%!TR$@(2&G2X@`!*RO65','5U
M^-$E)4L!1@=ZPN%<5X7PVQ3;/<:?NT)4.6HV+J"D?JYF1 $5?''N$I(FXN,G
M'\C=S_U:#40-0'42-XFG43()/45F'C_"FT(!?NQK6$ FR<R8V'EWI.<<X6G0
M@NWR2M02D&Q<!)["1DT&D221C &:- U*@)G?`K)5QRP;6A*CQ %1TA)L5RH[
MXQ45WQ2RN"U;J7Q5L.ZI0BQ6AQR!,)4"""(DP#B@U[G4F\X1*3_2W8$;_P`G
M=JKQ()<N^# Z@KVIQ41V:5^?X501>V[5PPM[]+.DN+<2A=@L2^4D+4F58&DF
M$Q [T]_?6J_94ECB3+VM19)L3))$&!(G$_6@V"E4SRU'?H**"4$A!,D]!BL#
M4VVZ&5)XT7%)/+"K11)"!Y8E6X)DG[V*M'BS*%VS#UGQ(OO).B;()+I2D:B!
MJ^=!L*"H]T_04RQ"52WC.R1/[:S%\29%RQ;^P\2YCX46D^Q@*6 ),>;L1]:3
MO$FT.(;/#N*!US5H0;1,J@28\_2:"\H&1#9Q(.!^=)0!4GR2<SY=\5FKXF@W
M3;"^&\3#SB5*0@VB94!@GW\[T:^)Z+EE@\+XJ'EA2DH-JF2 `#'GZ2*#22B?
MN1UV%9EZ"GQ+X?*DA.E%^KW=OL!F)Z8-)SBK;5TPP[PWB@>N-?*;-JD%82/,
M1Y^F*I<2>2_Q'AR4V_&+6^;#W)";-M16%( 5A2HP!^-!62EX^'K /\/MK)GE
M,?RRW.MX^[!B$Y5@'. 3OFM>T\Z^(*TD$\0?F!M$#]T5EN+NT*;MW'>-ZUSR
MVSPQ@SI&8$]/W59M;E/#]%FY:<7<N'UN/2Y:("E$Q)@*Z2*")RWN[GQ!>"RO
M5VFFV9"@FW0[KDK.RMH_?4=XRZZS9MFX]F::OKQ-Y>K0E3:U``!3B%>0:E#8
```

```
MX!5Z5I*OVT73;*N%\33<.A2DI-HF5A(S][I/XT+G$[5MYJW?X=Q'7=*66VE6
M8\Z@`5$#5F.I%!4;0Y:\*1:FX+EI=W#A<XE=6B TPA*4%!2A4ME"B(3L.U+@
MSK)X6/:[EJZLF.,72''UA(94T&(1(]Q*=920-@5"-JON<5LDN-V;]CQ!+KNH
M--*LA*P@28$Y`&:=?$+!I*&5\-OTH>)TLGA^%&),#J0!/RH*889N;/B*N%I8
M/*X@MVR4RI/+0KEMID1Y2/>':KUDH7MP_P`32DEMXZ;11P1;X4 ?]J3G-0/<
M1M&M-JAB^M5NF$ <-]X[F$B)P*:VXAPNP:8M4,<590A/+0E5BHF!GKN8'K0:
MI$B,S^S-'IE8G./WUG.<:X:VM"%JX@A;A*4I78K!5&2 (SL:<<>X4VZD..WP
M*YTI58.2>I $9@"@T )]#F#JVS3J2=8A6ZJSQQWA("0IZ\25*T@&Q=R=\>6A
M<\2<$;Y85>W E4 *LG1)[>[0:!!(/F@8Q.V:C4DE8)5O'7>J*_$O`DPE5ZZD
ME0`U6CPDS_9J(^*?#PTJ_27N[@VSHC/]F@O:3"<@G'7:J=_;,71X6Q<H#ENY
MQ!E+@5D%.AR142?%7AY<:>*IZ _8NC/]RF'BGPXXIHGB+*RVM+B IIWRD2 1
MY-\D?.@K7-D[<<+XBUQ-T7*;"R=!D$:GM)6VX/[*"$YZ_"NI6E(XBWY,:D3"
M9G:N?7XCX ^A3:^)VZVG$AM:2EV""#(C3V-3_P`:>#J<2XGBUL5)TQ*E=#ZB
M@#A[-W>!AE]##=FCB;CJ'PHEQ>BX6J"F(2-4]:@;=6NW:O5NNI>7Q06Q.HE'
M*YI21HG3.D 3$]9S4S/&N"MMI;:XC9A 65@:^JE%1W]2:C:N^!JNS=IXA:\R
M1*?:!H^.@F)QO$T`-N.?R^SXDJZL;Y:7%,W/-6&E,_K@2$ IE.U;R4Z5LE/F
M`#8F/>\N_P"^L=IOA+[3[/MS#@N 4J4JZ2M24J!E*25$I!Q@8P*UV7V@MI8N
M&#HT``OMG81W]*#/7;,7Z^&VMDI(M+*Z:NRZRB&M25?S:2(!*B52H$P4YR<3
M.E(\2^'U-A*ARKD&%2%>9 Z>LCY5#PWP^S8.6JK;BO$^0RZ'$VIXBGEDZM4%
M`&03,_&M![@G.MD,-N7##C:G%MW3#R4O(YBRM0"HV)-!@<' '$[$"-,WR@9,
M*/M `VJ7@3:'N*\-#HYJ/9'UE*Q(GVH`?."16N]P;5:LMLA^S4W[K]N4I69R
MK)!]XP3 R:9WA2P646R7[5]E(0AYD><()*CNDC*H.VXH.=X`OB7$FN$\/8XH
MJU"N'NW"W/9T/%2O:UH$ZL@1&QK2X?QFZO4<-XHX4FTXI<)M6K$(2GD$J4-?
M-]Y?\V<$#*L1`G1M.$M<.XFQ>6C*VVV;4VO)""4@%WF$_P!X_C52UX(+'AG"
MK$.NE'#KE-PA9; *R%.'2<X]\[3M0!PRZ5?7MTXOB!04^17#5LA"[<@@`ZCY
ME C.T>:M4)(`A:C,C,=ZJVMF+>Y<NW%(=N76PTI3;"&AID$:@"2HB!DU<24G
M2"H')C,YF@2@1B9B?O5 L$.#2!I)5G)JY@SC.:KN(((&E0][[Q]*!D(/,&E*
MNL@)CI5@)5R]*^:&R-)T.:",="#(/J*@"0I7NG<CJ8Q1D0V!I5N-D#?ZT%2R
M:(X_<I5><44BW7;J9;7?NJ3"DDJ!!)F?+6$GBCC``$\0M^,WESQ=*-0M5WZG
M)/,TZ2U,^Z9]-XK?M0MKC%R^L@-.+MRVHD2=*""".G^%9"^$NL>$TMV=E;,\
M;0T%!YD(2Z%\W)#@@^[(.<C%!J<6?N6G[MAMQ20]Q8VB' J5-H%LASRS(WG>
M?>K.?Y]DRZT];BX"EM--W-Q;H*M;BR@P`D Z<'(S-:O%K1^YN+JXMVRX6^*F
M\:92L:G4>SH;@$F!G5OVK%/"KYV\N[I5DVP5N6SX2VK45%M:EJ23)E?NC$#:
M@*[X=<\'MKE#MO;<30JVN5^U*X:RV+53394F820=1@9[501;I9X%=<1]MX1?
MENV#@;1PRW3RW(!A11)QD01GTJWQ2UXC><0=OT\.N6F7[")2ILK4M6ODE*0I
M()2#.1IWGO377)/A6]M&>'W5N^;,:TFQY6M0`$R!"CG?>@L_H%-I<VZ+QKA=
MTBY<4RD-</0R4*"5+U$B9$((CU]*-? ^&+(GA]L,9"1'[*M(L6^'7]FI-[Q"
MZ+KZVBF\N2\&@&EJU('W52G3/8D=:ME )!D=>I[T&(/#_"5N(2>'H,X@*6/_
M`!5PMTTA%T^A"0$I<4 .P!Q7J"$`/M]/,.IKS&[_`*9<`?ZU>/F:"BZD!"@,
M&*GLT_9DS'FJ)P2E4"<58LQ]BKOJH+0W'XT\`TX3\Q\*0C?I0+2.U/IQ_A2$
M4_4=10,<3^^EU[46#3$9]*#1&U$F-Y_"F';J>M&),#I0.3]*=.33B2=/2E$"
M`:!8[;9K-XK_`$5._O?NK3F1OCXUF<6_HJ)&ZX_"@PB//6OX> '&[3MK_=64
M!*ZVO#\CC5H$I)\_3X&@[E$&(2,[DF*K<97RN#72A&$@F)/WAD15E(Z@](R:
MJ\76E'"72<A*D8&3&M,Q0&56W&+9*TK660\'$SJ0=2%2,*$Q-6GS[0C2XY$.
MH= 2N(4E04.G<4S#Z;I@7"%+"5K(\Z5(.#V4`:,CI))Z00:"*Z_E26TNK<(2
MXEP0L"5)R.E)2$O+96H%9:=#J94/> (R!\31J2?*)/X4X0=2< YZQ%!R?&KO
MCMO>6;+G*>2A]+UJMID#4L2 #ZR3CX&MYJWNW6F/TBM"[EMSF)#20E*%`%."
M#YL$U:N%<M5OJ:6X5.@)TMA>E6?,>PB1/K1+0-4A(Z[Q01.6Z'767%I.MDJ+
M<8@D:<_(FC=MVW;JWN"D\VV4LM']74-)Q\*?00)TB?0"I"F8\H!^'^- RT)<
M+2RGS-%2T&(`)24GKV)%1+0%W-J>4XI:`X4J2@Z4`I@ZL]1CK5A23!)2G;M4
M1)]I0T&EJ4M*E!242E.D#<S@YH'++:GVG5(',;"PDZ=M0$]?04Z[=MRXMWUI
M^UM]?*5!\NL`*^H`J5+9!3&@#U$T80`L0$GX`9H*SC+3URP^M/VC.L-*@RG4
MF%=>L5(II#CK3BD)+B-00H@R`1G]E3%$QA._IVI!`A$`1(_905@S%\RX6%J<
M0TL)="3I0"$R#G<XZ=*E"4%QIPY<;0I ,' 5IU=>ND4Z%'VM+ 9=.IHK#@1Y
M!'0GN9V]*E @3Y=NU!5=MVG+JVN5I2I^WU\M<'RZQ!^M,XPTZMEY:$E;.L-*
M*3*=20#UZ@"KA2"L"!]*!0`0D$""<?2@JK:2X^T^I(+S0(0J#B4@']E.43>L
M*%NXM:4.:70GRHE(U YW,#ITJ;0,"$G8[>E %A-XVQR5^9M:]81Y! `@GN9P
M/2@$LH6^RZH?:-I4E*H.`H#5U]!]*)5JTY<6[RD`O6_,Y:H/E"T@*^HJ=+9
M3"1TW'I1Z =P(/>@J.VS"[FWN%HERVU\D@$:2I.E7U [5(XE*W6G"F5L%:T'
M:"4Z3^!(J4I5`.E,_ =J10"HI*1I@]/2@S+YY"+BWU65ZZIHE;;C+!4A!5Y3
M)!'2K;K"%OM/.)"E,E:D'L2()^A-5KJ_%M>)9]@X@[K AUBT*VQ)ZJ!^M7BW
MJ0HP"03N/2@A>MFUO-/*!YEL5K008C4G2=M\$T;ENAR_MKE0(=MEK6W!@ J3
MI./@:E6B=9TB#,;9Q3\N5?$GH* 5)*UVZSJ"F'2ZB%1YBE2#^"C4'$ VL\/%
MRXL:;X.-!$F'-) )`&!$Y/:K6F).T@]I$5$^\&N0' XH.N:!"9R<R8V&-_44
M$=VS[6NV4XIP*M;A+[90O[PD9D;032?:]I7;J=<7-N\EY&E0'F (S\E&I((F
M3F1.?6E*8(U3!ZGUH =;]JN+-UY;A-L\EYN%=<C.-LFC<;]H<MENN.E5O<)?
M1"\%0"DYGIYC2@!0@_B>]& -*3.=7<]Z"IQ06SHX;[9<N(#?$&5L`$G6Z-6E
M)P8!^7QJ2]M6^(&S]I<=`M;INY24F3J3.,S@SZ5,MYME3&MY+9<<2VC42-2B
M< >N*E*)5 'H?4T%2Z83=MLI=*@6WFWTD)D*4DDP9Z;#ZU#<6;-R+?F)0 U<
M-O8:!!TR=)GH>M6P,(,`X'RWI^6%*3@=-J#/?X;;7)MU*9:3R;A#I^Q2=4!0
MTGT,CZ5!?<(L'?84\FU8T7K"R2PV"Z 3]G@"0KMMBM4(.@'2,Q,#UH'DM)2P
M'^4F76RWS-(ES.F)^]OMF@S[W@-A<>PEJQL&0S=M/KTVR!S$)F4&!D&1@XQ1
MW'!>%O"W#7#N&MP^VXJ;= *D!4J3A/48BM %7<XQN*!)A209&!,N1WH*EQP7
MASKMF6N&</:2BX0X[H8"=:!,C STHKC@/"7UVA1PVS:;0^E;H2T$ZT:5`IP.
MY2?E5T* TY)&-I-2((A(229CH>DT&7?^'+"X79"SL+9HHNFW'@`L:F@"%C'7
M([?&@N^!,%RU-JE3;:;A/.2EYQ,MPJ0/-O.G:*UWK1JYY/.:U\AQ+Z9D:%"8
M./CL:)Q/VAR),'(F<F@Q7>#:'K=5M<7B&^;+T7;B?)I4,>;?5IIW>%/>UV:6
M^(\51;:E^TQQ!0.@).DB2?O1\JT^5!.4P(.$^OQHPB5E1 U294(SF@S%\$7S
M+8(XSQGEJ<6'E?I"2A/+5&D1^L$]-B:JN\(<;OK%"..<>AXO)6?:PHC0C4(.
```

```
MGN,S6^5$*$G3)R2O-9RVUHX]8/>U7"PM5T0VXL*2C[+8>4'ZDT#C@P221Q[C
M>\$J4VX3CU11CACZ8">/WT] NT85^.FKR%$+`!Z[1Z4ZD@Z=2< R/C09:K3B
M:-/+XTDG&'.&MY^BA1:N-ITQQ#AB@.KEAIC,=%U<Y9.C8'RQY9HM!2(*3 Q,
M`#>@H.N^(2D%#WA]9/53#R?V*-5R/%!(``AXC,8N1./0UIK6H2"#UCS1^ZG0
MN1)68"B-R>E!F)3XEU#6C@!QLE5R/W&D%\;!S9\.4(V;?<!^I;K7F8 ).-@*
MBT@@:=(,#<304T77%1_.<*:4`<%%^D$?5 H_;KD*\W [@F9\M[;G']X5>*#!
M.B.V`)J-04,'4/G%!71<NEQM0X+Q'"@?*];JG_M*\SNR?:'R04DN*D*B1GTK
MU-N \T)P5"<GN*\LNB#</'^NK]M!37[I^%6[,2R?[7[JJ+R%$=!WJY9C^3D_
MUJ"T!$#:D!VWIXD]#3X,[T#$8]:<;4\)(FA^% L$SN/A31G&U% Z4MJ#1 ,#
M%&!C)IA.9)IQU $T!#&(Q2 D_"FV`S,T_P!=J!R/@*S>*P;5`D1J_=6GC3'[
M:S>*F+5L3U.U!B)W( G-;GAN1QRU$8*B?C -823YR)KH/#!*O$%FD=S ]=)H
M.V"9/0'T-4^.$-\*4LZE$/-2`),<Q,P.]:*0<>::H\=<+7#D.*4HI3<L$A()
M)'-3@0)G&PWH+-JX+JV2^A#R4J)@.H*%8/90%2Z8(D*GY5*TZEYL.)6\0HD`
MNM*0<?U5`$4E%0)CH>E!74@&/),=XI!(U"0<'(Q%2$F-]Z1)(W$4$#Y0V6 6
MG5\QS0"A&H),3*CT%$MM`4/(B9.PI+6$J;$+)68&E!(!WR1L/C3J.1G?K0,E
MN9.T](HH!P!B?C3)40#FAU3,@_04! YC?ICIBA"M-TVT&G?,A2BYIE B,$]"
M9Q2*DA4:3TWC?ZTM<OA&A<J053H\N.A.T^E!8@:4]?2*( :P8CM]*C*3I]P]
M.@-.!"TC29^ _.@>-4#Y_A1 'RU&`24RC(]!1@`E(".W0=Z $+(ODM<EXGE%
M9="/((QI)G<SM%2D'<S@8J%*B+P,+8=!4WK*^5Y!F()F)HU!21(1((.Z: PG
M4L1OB@2DB",_^5*#Y2E$*!DP-]Z `P/+.!B!02 >X8C;I0(5-XED-.DJ:4OF
M\O[/!&">YG I!) 0-.9&8IVCIN>5RW!+17J#?DP8@JVGTH)DI&E/RZ4^DA8&
MGS;[TT ?=[=!242H@Z1 $3&?VT#%,(VD=?I25!DQ_F*92I2!&)[#.*6H:AN#
MW^5!1N;[D7R;8<-XDZ3IEYFVUM#5&ZYQ'7M6AI!&!]X]1VJ!=TTV[RU,WBE'
M3!1:N+;R.JP-(]9VJRD@1,Y)Z>E .@!*I&Q/[!1$)))T]3N:?/F[`[D#M1DD
MDYGY4$1 U$=AZ5"^X6A;X6>:\4(TIG20)R>@@15I9\Y$]-L5$M?++0UJ',4I
M(A)(QG,#`B<G%!&HR3G)/4CO3'O/7:?6I% CK'[=Z$A6H^?RY_;0(G^MOZ^M
M.DJTB(B=I/>F&2D:DD@*Q/K1C &1N=CL)/I01N/H80@./);YSB6T),^91F (
MHS/,C Z@Q@9^- ^^U;<D..!(<=#;4D^99F /7%&H9/ESCH>]`").D@2(&"*-
M(VGK`%1@[>4&0,Z:=( 6)';IZT! >4"/>(G'K0NJMTEGF\I)YB V7=.5Y@">
MO:,U(D^[`(\P_;4;YMRJW3<!J>>@M<T))YF8TS][?;- Y "=SC&PS0;*2=68
M'45.HR!J$$01/:: @F#K,$"@')TC4.FYFC2-0;)TG8=>]!&G2"N9@#4=\U()
M*1G,[R3UH ?MV[D6Y=:2LLO!YO?"QL=\[GZU*2H>]/28'J>E1OL-NAHK1);<
M"T'S84.O3H3OBD"5.$% ))Z(]?C0$ 0"3O'N]\^M$6]*@E2 !"M@*&8!\IZ]
M`*F^\%;$DS01*$ B3MOCM66MDI\0V3QNGUI<%T=#KNI*(1]WMO6NX#!A1R,0
M.O6LWV=+7B2Q6EQ]1=:NY#KY6E/D3[H.!O07$ !:9( P1@GI4L04D$'.`$G>
M#4:B-0.H$P#.H]MJ2@1I!2DB<3)[T#IZ8C8US_&$A?B)U7LMY>I8X.'T6MH^
MMM:U^TA$@HDX"B=M@:WD"1'+B0-DQ^TUS/'WWD<;NDV]VW9W:^")1;N.7*;?
MS>V!1 62(.D*Z]*#$=O.(O\`%EL<._2'# VW#C5WQ!PZ#W4I6G3.``8VJW=/
M>(&.)HL>'\2NW%>RMN.%5XE2-1!)A9('P[UG6_/5^F;:^O;9V]O6&]"UWK;B
M'2' HZG=12#"?O&KW%%-WEO>\-8N+-RZ6Q8%!]I;#9#:%A8YA.B05)Q,GI0"
MGBWC$W[G#F[NX7=-I25-HY;F"D*&8(V,UT/ACB-_Q.QNE<1?+KK+W+!*$IT@
M)3CR@=2?K60%%I[BE@EBWN+M3'#.7;N*\BPW;C6H*! ZI(SF<36OX>7[0WQ%
MTK8<U7(!4RE00"&VQ !SB@W\0010:"HC2#\<4B%A/N^7.R?\:;&^D[X,C\Z
M4D)=;49/F&)BO*+M1Y[O]M7[:]9 *EHSG5@Q7DER2JX=DSYR)[YH*BQA7PK1
MLA_)I_K5GJ TKGM%:%E_12"/O4%G)]#3@"!B:02-@8^5(@XSM0(3.:<CL?E3
M1O)S&#2&!O\`3K0#!/Y4\1L*<)SD].U-F<T&E%$/>W@TP$'O\:+/U- Z@#UB
MB @"3FAT[Y-*1.()H")[C'>LSBQ!MFQW4:TCC>L_BW]':']8Y[T&&D^<@=ZW
MO"R5?QAM5$A*05:CV\IK$2/.1'6MSPRG5QVV;.)U9[0DT'?2`=T[D;BLSQ X
MTQ86[KB@E*+MA1@:C <2=AO6DVL@0"C']836?QQ_EV-N\H!247MNHA/F) <!
M, ?"@NIO[9RV8N \ZIJX=Y3>IE0.J2,@B0,')@4;CK36C4LRM:4(T@*DF8VV
M'J:K6H%S8(6'KT)4AYN7%J0N%JR3JSJ$8/05(+4-+*T7%R3J;4=3TY0G2/D1
MD]SO0)3P;<:0<J<.E.D2)@G)&VU$IQ*>6G[0EQ92F$@B0"<GI@']E0.6(<M%
M6ZG+DH6SRM27R%1JU;SO.)[8J9#?)<4I"W5A3ZWM*USE22F-_=CI0 I:4%I)
M#QYA("@@*&!)D]!ZFF4HI>0A15YM4$)!`@=3TWJ'V-IE++7\J5K0&]7,42 D
MZ@2J=_6I3;)U*E3RM7,W<)RL03O].U ZG$H>::*72MW5$-@I$"3)Z8_924XE
M#S;.AXJ<"SJ")2-(ZGI28MD,2$!PSR<+65 <OW>O7$]X$]JB58M)420O*G#E
M:OO[QGT$=J"0E(N$MD+E0U3H!2(@9/3>G02JX#92N"V5Z]$I&8B>^:%%JA+B
M,K4`I"LE4RD0.M W:,H?-N&WX7;.)U2K2$J5*A,^])QZ4%DI"7DLI0J5)*IT
M0!!2-^YU4X/+>;;Y3J@M))4&_*F"!DSUG\#0KM&E7)N-*M9>;>/F4!J0(&)]
M3CJ30FS86A*'$J4`A:.J5D+5J,Y[S\*"1N4OI0&UY3JU!'EWB)[YI]9]H0SR
MUY:+FO1*/> @GO3(M6A<!Q*#K#B7-U1J`@'?M4:N'6JV"T4*A3!8/F4/+JU=
M]YZT$X/\LY(:<2KEZRYR_)&J(U=^M,?*XA"6E^="E:BUY1"@(GOF:CN&VW^)
M)#C#LAQ%X' "&]:?(!OO`&*#V&W;M!:)00R&%L1*ITJ5J/7O&:"8X?0@M.E2
MD%6L->5.8@F=_P#&AU*#R&@E?F05E>B4C($3.^:!-HR'@XE)GF(=F5>\D:1U
MC:HSP^W4URRVHHY1;]Y4A)5)&_>@L)<5[4&=#GN:]8;E/O1!,[YFI$KFZY!0
M]/)+G,Y7V>#$%4[Y^E1H8;0]K"3E\/SJ4?,`4CKM!VJ%BQ88=%HVR_I-FMG6
M2HIT*<)(F?>D[]!072?M$-Z5>=!4%!'E$$""">_FJ-:TH>:2I#Q*@25I;E CN
M>G^!H7+5E=X;HI675/M/D:E1J;3"<3$9,CK0.V+;J6FSS("'4"%J&'"2J<[]
MCTH)`ZA+K;.EXJ6"00W*1IB9/0YVI!Y'/;9*7=2D%4A *0! ,GIO0>R-G">:
MDZFU&%D9;$#K\9[T*K)HHT O)U(<3*75`@+,G,_3M0)=_;M7B;<INN8I2$@I
MM5*1Y@(\PP/W5<0M`>::4M6M2%J3Y9$)`F3TW%9CSK XFW;K1Q K#K"M;:'"
M@%*0$^88`C)[YFKJ+71;H9YMQI#;R-7..J'-S,[B,'[O2@G6\VBX98*U%U\K
MT!*9'E )DC QWWIG+EEM]AA2B%OE?+A,@A(DR1@;]:B9M@SK`N+I2%\CRJ>)
MCE :8SUCS=Z9NUTW/M/M=WJYCS@;YYT_:I (CL(\HZ4%A;S:'FFU*\[^H($2
M/*G49Z# .]"Z^TTMAIQS2M]2TM #>!J,]L55=LE.-):%]?(2EAMGR7)SRX(4
M<>\8A1C,T:M*+AO5>W27'77G$)#JM(E !&!A(C /6@F=?::<;:<5#KQ4&QDZ
MB,G(P,=Z9VY88N&&75A+KZEAE)"O.4B2)&!C.8JN;"6N4>(\1@MH;*O:<^4S
M.!N=CW%3N6Y5<%8N[P)#C[ND/P/.(T[>ZG!2.A% ;S[+=Y;L+5#MPI:64PKS
M$"3D#$#.:=:TMK:22E"G7%-MRH^=0251CT2:B<LE*L5VJ;^^:4JW0SSD/PN4
```

```
M+U:YCWE;$]0*LV[?*>4Y[1<KU7;EP4J<D)"DZ>6,#R"9`[@4%>Y=:MDL!YP(
MYKH;;\RLK,P!ZQ-"^\TTM"'7`DNN!MH&?,K)C\#4)M&^'LL-/\8O]=PU[$TI
M;FI2UE17KV]Z)3)Q$"IWK<&Y6\+NY1-REXM)C2D`1H&/=DD]Z '%H;4C6M*"
MHA"=4Y.<"CUMH>:0MP!3JPE .-1R2!\@:@]D5R V+^Z)#/+#BFTZM6N=<Q[T
M8^%3,MJ1=)=+ZE)0_P`T(+23Y8@)!Z"<T$I `1J,%2H`QDR?W"@=2TI3)=Y9
M/.26^9IPO,1.QWR/6H7+:Z6RUR[T)<1;Z LVR%?:Z\N?W93\ZEO"2\TI;C"6
M_;6UMAQA!*4A,%*3.%$R9&:"0K2 96.V2,YFG;&I6DD&")!,_A5,M72[5M+K
MEL[<-M*^T4P"`]J&E0$X`3([[&:DTW#KZ.:FS4RAU*DZFY4E(21(R0%:NO8T
M%U"3*2 0)3)'QI!!)V)R<2>]4W$\04PRM*>&KNVF@4*=;64I>*X)&9"=!C&=
M^E7&4.JN4JN&[0H;O%+:(2HK0SH(21.->I6>D3U-!$^PFX2C4SKY:PX@F3H4
M!N/K0J0%$]@0-B8R:@6QQ=YAM=RQPM;K+1<01S2$W.HQ'9/+.^\ST-2/M/+O
MBLM6JV6WRMLDN:@C08)Z:M1CM% 6G2" ,Y@:8J8**529P3[H%4D-W;@2X];V
MQ?:0E2=*G"-2C#F8B G:=S1EIY?$6%KM4I9;?N E:'B);* $%28@DF)!VB:"
MPM:5#RJSI.\1TK.9M QXJM;@7EZ\'F;H\NX>UH;A*?<$8!FK+KER765!A0T-
M(5"+E(&M6%I(C(2#COTJE:M<GQ2PZMVZE;-WY'KD.)2/)IT@#R@SMZ4&R0HA
M)\JA`,#X5&I/NC28U;R3T-2)(( !0! /PISIQ)!@1\?G05<P#$>43Y2:P;W@
M%OXLO_:6[QY@V:U6*T\@*E2"5DCSC]<5T24I!20"8 [G-8/%?TAP^[O3PIK0
M+ID/-PC5KNR\G6!/7DI42-HU=308%OX.L;UEIQOC+RDNM)>27.'Z0020,\R)
MD'%:O _"ME9<2N!^D;*]<MDI2];WO"N:VG6"I)CF#.#L<?.K=P3PV[?M+)Q2
M+=#%G;-SG0A=PM!(GK'7X=JIJ>N>%\4XK;6CEPXY<WG#;7[2X*G2EQMV=+BC
MY5;0HGRT"N_ 7MMTY<.<;;4M9V]C(2D``)2!J,) ``&P``Z5J\!X&>"V#MK[
M0W<:W"YJ2E2(PD1U_5J-"N)M6OLCY<:9=NFK9IY=XEZZ2E:5E9+B3[PCRF,"
M-ZN\(6M;5W:.+<=%F^JW0XM94M:0E"I4>JI4<P.F*"RI( .,@>IIC(G,9_5J
M=QL`9U93L:A6W$D(VC.DF@9)U.(`*\*'88KR2X7K=<)W*B<5ZRI.D@D20?U:
M\D<$2#$YVH*YV5WBKUHX>7R4I\Y\TSTJCMJ[16CP]DE7.U -P4Y/6@/5<S$(
MBE-P1[R/A_DU;Y:1NXF#MO\`E2*$;EP?0T%/2^3',3\A_C2Y;_\`K?H/\:N!
M#9W7]!2*6\#6KZ1%!1#3QSSB12+#FY>7]:T`AB#*E_0?G3*3;Q(+D_ 4%T>N
M]%0`'M1IGO$=30.-\11!68G,=:82=R#3@S.\4"G'PWK,XN89:&-R:TLC'6LW
MBX^Q9C8$T&0GWCVK>\*H)\16O;SD_P!PU@B-1$&:W?"F/$EIF,+_`.X:#NQ)
M[_"16?QU?(X?:O*U%+=_;JT@:BJ'`8 &YK3"95(D`_#%9O'W$L6-F[H<5IXA
M;JTH3J4J%@P`-SZ4%ZV4+BW0\$.MI7,)=;Y:A!C*2 1M4LD'8[^E1VZQ=6K=
MP&764KF$/(T+$&,I.U2!"9G!/;% .D0>H^5+02HXQ\!%'RT@@J;3(V,`TBE'
MZH(^%! M7+6T@MK47"0%(1*1CJ>E&I&0-./AZ4ZU(2^RWRG#S KS(1*40)\Q
MZ46E/U^%!'R\^ZF<=*=2,B4I^E&$I*@,2:<-@#]NU!'RB2(TS.Q3_C0%0-\+
M<,.$\HN%P->0`&(U=\S%6"A.!"8D9 J(.I]N3;\I[46N9S2C[.-4:=7ZW6.U
M!)RR#[J)G.*1;)4#Y>GW?\:-402!_F:)*1&-S01I0K5"DICX48:\H)2F31 '
M6(ISM &305%K4KB/LH96(:YI=+?D]Z(U3[VQCM1EN1D)CT'K2+D7_LX9>CE<
MSG%'V?O1I"OUNL=JF6"-0&3UQZT$!20!@"/SI:,F`F([>M&8$3M3E()VV!Z#
MO0"VGW5:4S,Q'K487%_[,+=PD,%WG<O[.-41JGWLC':K`1'0[_OJ,.@WPM>2
M\"&>8'N7Y#YHTZN\YB@,I 5(2-^H'>A4VK4DE*=AL!4A0DE6,@C]M-H&E'P$
M;=Z",((CR?**<(42GRR1&P%&E "AC)@4X `,^[ G;N:"BY>-L\03:JMKU1*T
M("V[52FY(P2O;K5X).E).\>E57>((9XDBT-K>J<6IM(=1:J+0U ??B($Y^!J
MYIP(D"1C% P3\1].U" -).J('<=JEDI6/@,R,8J.)23L9ZD9Q0"H#4HDJ&,"
M?2@6XVEYIHJ.IW6$[D8`)G&,5(HPHC4.V_I0K=2'T-%<*<"R!D^Z),F('SH'
M!R949!,>8]A3X.K.3(W/I3DD"01U'O>E.4P%3&D%74]J!SON8])HS)D#)@Y@
MT! )G"HZ9HR"<8CX&@B>?0VEO4ZA!=<T(2HP5*'0#OO3J 4<;3^^A=<0V6TK
M=0@NN%" 9\YW('K$T1$$F,3.U Q23MOVCUI!OS04C.^,[TH))&D]2,>M2 20
M?H?@J@`(*4>Z)W T^M!<):')2[RP"[]GK"<KZ:9Z[[9WJ?2DYB))GZU'<<A"
MFBX&P5.#EZU)DJ])ZQ.V: %)(PH]1VI E('GQC[WK1CRR<D;=.](G.Y^OK0(
M%*H!5D3]X]ZDUDB9,DG.8H=1_6&0<:O6BDA,DF 2/>)_"@CN+9JY-NMQOF&W
M=YC9`5Y51$XWQT.*(@R)5L9G?K0.L-/!E2T:^6Z5MJ 5Y%$;[[P34IU$^[&_
MW8H`*"<2($G;K]:=;9"IT)]<4:1O,SGTZ4Z@DS.<T%<C3(V$':*S66BSXMMU
M!U]Q2K2Z44N.Z@GW-ATW/X5JK;3KD) /0P/WUF6MHVQXL:*%/#F6-PHAQTKC
MSH]V=AD[4&B3`&,D"9<,4ITJ&_H()ZT4J"(!@ "/-'[*!1/?>,<PF@=LR#OM
MVHW4H<+2UH2>2I3C?32HI*2<;X)^M G&H8V.R2:)9 .#O.R2*"LJS95</.EM
M',>;#:\$R$E1'7&5'(JO;\$L6$OAIEPJN"A2UK=4M8*0H)*5*)*2`I4$'M6B
MD2L2F<G<>E.E")!@;#:@S$<-8;9*?M@X2%J?+H+NH A*M1!R`8!S5BR9;MFU
M(1J65**W'%KE:U0!J40,F$CMM4VDP("@($' IT!<3J6F9ZB@<*2H0!L")R:<
MQI/E(3C)Q494=1!/7JLGI1>\"9"1C$$B@C<1`*H3BO(E@#&U>MOJ(;<"=PDG
M(BO("#I$GI01J (4)K8LI%B(G"C6*?=5&];5H(LTCH302@12B13XG-,,9)^%
M`QR8F*8`B?CWHM]C3;F:!1)FFF>E%O&#0QUZT&FD&3F9_"BF,$RGX4*2!/PI
MQ@2:`O@*=/\`6P/A32>IWIY!(S\J!$DB?6LSB_\`-,]I-:9QCI67QC+3!Z F
M@QP?--=#X2T_QDM8,&%[Y^XJN=!E6*W_``F=/B.T.1APS_L*H/0@2<UF<?=Y
M-K8.*DA'$;91"4E2C"YP!DGX9K12I.\R>QB*RO$3S=O9\/><6HH:XG;K44C4
MJ K,`9/P%!KI=#B$+3S(5/\`.-J;5O&4J (^8IRK>8&:K(O&%6EN\A3Q0^Z$
MC4T0H&5>\(E(P<FB6^A);25*EPZ4:4:@8!.3TP-S02$P8 $=:=2R`8'X^E0*
M>0AYIM162Y(20B1C.3$#YT[BP@M)*E%3BE :4@C"9SVV-!)S0'4(*5RJ2(22
M!'<C`I%60!M41<3S6VO/J4%$'2(@#,G:CU /(0K&M"E Z01 B<]/>%!(#D8B
M?A3 GKB!4:G4)N&VCS2I:2H*" 4B(W/3?\#3%T<U#<JU%&J0D:8!`WVG-!/J
M`S'6AYJ?:N4&W)#>L*Y9T[Q&K:?2HPZDW7(/,*M',D(E,3&^TYVWIPXA5T&/
MM KE<R2V-,%4>]M/I03&.J9$^GYTM4&1/QP*%3@]HY?VNN-9.@:1F(G:<[4P
M<3S"T-85HUSH$1,;[303!7FSCUBEJ `&F2!Z#K0!:%/*:!<U)1KDH$$D1.T
MX-!SD>UEB7%*#7,GE^6)C?:?2@(N(]K#10YJ+>O5RSI]Z(U;3Z4\R3@Q_C47
M.0J\+/VG,2T')4CRP51$[3(.*0=3SUL@N%:4:B5-@)B>^T^E!*.L"3/IWIR/
M,<28VQ0)6.:MGS:THUR4PF)CWMJDE'/+140L-A?NB""2-]I\IH'C>1C.,4_,
M'M7*TKU\K65:#HC5$:MI]-ZC]H;]K]FE1<Y?-G1Y=.J/>VGT[4R;ALW/LREN
M!T-\WW8&G5I][:9Z4$Q(\P!V(C;O3%7NR8$;SZTRG$"Z+(4KFEOFD1@)"HWV
MF>E 7$<\,<P\SEAP>7!3JC?:9Z4$H/GF`0-OK1 J( DR8R#ZU"'FA=!@KAXH
M"XC$:HWVGTFC0^P;D6O,AXM<V DQIU1,[;D8WS0$;QI%PBUUW.I2D(\MJZ6]
```

```
M1'ZX3IZ]ZE""(\PQW-5'.-6#'$4<-7=N)NUK0E+0:<*=2@(\P3IZCK5LNMAU
M+(6>:I"EA/=(4 3.WWD_6@8I(4/,-A/K0J]R=69/7;%)RX81=V]LMV+A]*E-
MH@F4IW,[=1UZTRKFW2ZW;J(YSH4M"()D) U&8@;]Z!E#?S3WG$XIN:E%RVP7
M"%N)6I(@D0$YDQ'44RKAD73=LI0#[J5*0C2<I2!)VCKWHA=M)ODVG-AYUM2T
MI$R4@9,Q'4;T#0%#3.Y[](HU>8J@9DQGTIE.-IN&V5%*7G0LMH,R4I U$$?V
MA]:%QYAJZ9MW'$I>N-?*3DE92F51\*"32,B,08,G.*8IA2?+W[]JC=N6&GV;
M=;B4OOZN2V297I$JC'043JT)>0A:M"EZPA)F5$)DCZ9H(75-(4RAQ2 I:U!M
M*ADG<@3UBC6D`P$8R-J%QQIEUA#BTH6ZM0;2K<F)Q\II+6VEQ#:EI!65:$D9
M,"3^% :=("CU@@&/45(8"X QYLX[BJ[CK22EI3B0MS4$)) )B"8GTJ5:DBX0
MV5I"UE02DJ3*B,F.^*"4$ 95`SF@?+"E6W/+6KG2T7(]^"/+/WHG;-/ @A:R
MDDD!)*1.)Q^)^5"M#;@0IQ"/LW9;UE!*5=2GJ#':@> 2840)'QWISA)\YD3D
MT.$GWNLC/K1A*H4KR_>!$YWH!U03]H(R,*]:D$8\TYWU&C\QDA)4,R9B* ZL
M^4G?J:"!YA#O*+C>K0M2FSG"HB1\C3XF= D!6Z2:E+0><;YC(4IM2BB0?+TG
MZ&HB@^;!P3T)Q_DT$B!(GEYDY ]*=0*9D$8G8"HTM8*BD;[Z*9<H051).,)
MH#*C),_AUCXUD^PM.>)[=LN7Z2JP><*F[MQ)]] `!G SL,8K2"LDE6YV,#I6
M7PUD6?B](1=7-QKX8\J;BX+@'VB,"=AZ4%[]$M8">(<8'K^DW#^V:JKX;I/E
MXQQ=*A$GVT*_:DUJE8$Q'IUH#J(,:=A@DT&6CAK\^7C7$H,P2IE?7U:H7+"^
M@)_3EQ$3Y[1A1_\`AUK(94 #ZJGS'O43J9W'NC>2:#+78<7P4>(G4Z3@_HJW
M,?LIQPSQ`<_QI4G'_P"$,$'\:T%$$'I)_5)J32$MI.DYQ 2*#*_1O'=7F\6^
M:!OPAD#\%58:X9QD2#XEME?V^%#]RJLH/E*CJF)CRC_&IPI(G4H_`*%!1%IQ
M9&H?ISARC.0[8N#]CE &^,!)*+W@KG7S,OI_8N*TDO$K)!$!61\12@PD:3)'
M>@Q;A?&$6KNIC@Q^S5);6^% 1G<$5Y>K3IE)D1BO6KP+187:M,E+#IPL]$FO
M(S'*3!G&]!']U><Q6Y:#^2(G`FL1*O*O`K<MH-FV`?CZ4!B<DTA$2:4>F.\T
M\3]T?2@0P/3O0DF0!,?"G[4I@QW]:!A.V*1/K%+8[1BF,1W^5!HP9GZT:9/0
M@"AD=)-.#U,"-J LS,XHAE61(H1)DS1$_'% CFLOC/\`-L1N)'[*TYQ.]9?%
MS"&.QG]U!CCWCG-;WA,3XFM-X"7)_P"C56(@@*DB<YKH/".D^);>(C0[/_1J
MH.Y"E="J!Z)K-\0+#5IP]U>M01Q.V4=*=2H"B< ;]:U^7,D)``3%9OB(\FSX
M<^4+4EKB=LO2A&I1A1P`-SZ4%JV<]IM&WT-N("Y@.-Z58)&0<BC*"3Z]<"BM
MC[1:M/)96VE0,)=:Y:AF,I.VT_,5(49TP!W,"@KD:3[OX"F(V\O[*G+1&T$=
MH IE(,3I3]!-!"#]NAH(7*DJ5(3@`=S\Z/3T@C'0"FE2;EML,N'4E2@H-RD`
M;@G8&I-"P8T@8[4#)0=HR>L"D$*3@@9'2*(-*)P!\P*02LI@@1\!0"$$# GY
M"A2Y_+?9^6O5R>:%:/+&H")[STJ<(5(P-YZ4`5JOE6P;7JY7-*^7]G$Q&K;5
MZ=J!R"4[?' IT@Z=L>@BI"VK/EQ\!3!LB1H&?0?G0)*3J@B3'4"G4G42F#D;
MXQ4B6R%21GY4R@=1QTQM052L&Z4QRUR$:YT>7>(G::()\\0.N1'>G4Z%W98"
M'-26^85%`"8)B)VGTH],JP"/0Q0,4D R(%. H$QVVQ2(@&?PCTHRG,YVSM0#
M$R/0]1FH4OA5V;?2K6&>;.GRZ=>G>(F>F]3F2LC<C;:H.:DW/(^TUAKF%13@
MC5 SM.-J"12CJ(C$GJ.]-J,=,XP1WIR(4=]R.G>F,"8/KN.]!("=0$X._F]:
M,' $B)ZJQO0`^;WCB3[WK1'.9U?[4=:"N[QJTM^*CAR[A8N"M*-*6W-))$CS
M!.G8]ZNJ7Y0D*G&(<GK5-SBEJCB"+$W!#Y6E(1I6!)B,Z8Z]^M3A0S*8Q!\Y
M$9H#UJE(DQ&1JQ_G`H$ZBE/FS\:!,D@J)V&Q5ZT22DZ028@;ZJ!]PG) )[^E
M"FX;3?-VQ=(>6A;B49RE($GMU&-Z22,`3YHDP>U&T^V+E%N7DAU;)7H),E($
M$Q]*"1((*))&/KBG!ZR0>W3:F3G28Z#H>U$/>C]U`RYTIU*V,=>U1+22Z("P
M0#YH(Z=,_P"<U,HPDJ@8[CTH294<8SO\!05W5I0MII:PE3NL-I@R2!*H$]HI
M+1JB1)&J/+,?.:E<=0AQ+:W&TNN!6A"E`$P),#?Z4RD'2KR)D:AMTB@%;0)*
M@@:QJ .@8D"8[4ZFTAX*+:3H*M!*`2DG!^&*-:" I10($Q ':D1*ITSN?=&*
M`",I*DIUH)4E4))22(P?@2/F:!Q"7N47>25)=46^84RE4;I[&)R*E5(U#,#I
MCM4#W*4MHNA&M*E*;U:9!C,>L4"4A'E4H-*6@DI)(E)VP>F*=:&EK2XIEIQ3
M>KEJ4 2@G!(/21.U(['X'[U&2"825&"8`4: RRTNX;>4TVIYK5RW"F5(D08/
M213N!!4A:T)+B"HH4H>Z2()';!BF*R5"=63@R33K,&9/7,&@C=;2Z&W"UJ6R
M5%*B)*9QCY4G6FW7D.%N5("P#F1*1V/H*%=NVX^R\XVI3C 7H5"O+( /I]:G
M!WSJ,]O2@@4PA5PR\ILEQG5H,*@:@ >L'Y[4+C2%O-/:?.V%!&#&0)Q,=*M:
MA(3*95L#$FH5M0`E02"3@:?3XT$!0I=TATZPML$8/E,QNF8.PWVS658,)M/%
ML!RX67.$.**GGBO3]LG G88V%;+8(>4242"G[@`_;6+8VR;3QF6VU.K2K@RE
MGFNE9S<`8DF-J#<6LZA*D$0/O@=?A3A<H(@$`;ZIH'<0?@,D=Z;4`G*^_P!\
MT%@DF3&).:S.)(?>OD6C-PY:A3/-M@VK%RZ 2M+F%>4``R -R*O%:<D^:3T4
M:S.++=>0JV%LX^EU*?9W6FRKV=Y.0MS40-(.F(!V/PH';OO9W^(*O%E2TW%J
MRPTTF0IQ;&K0B>JE3$FA?XM:L-)*K>Z-P7T6Z[1#*2\AQ6HI24ZHR$DX)Z4U
MY9OOJN;@)6L6W%+#B*M*#J>2S; +#8C*BHD`&!(S%9W$7%)ND<;587@;O.*L
M.-6@9)N$I0PXB"W/O$IG?;-!I?I.V3:\Q2'$.2I/L_*!>"P)*= )\P!DCM5Q
MJY2^PIUMPZ=E"$I4A4 E*AT4`1(.U8=YPQ3]LU?7%E<KM1=O72[-I*DW92MM
M#:1H!'F"@21J]T5I\(LD65DZA%G[*E]]3Z&U+4I92I*8*]9)"C&4R8^M!;0N
M5 F,J!DN#\JD*TC=2(ZC5/[JC2@A1"=4R-].*2EPG209WRX*"M?D?HV^*1!%
ML]L3^HJO(UD%"8DC2)GO7K/$5)_17$"%3%H^?>)_T:J\E/\`-@`$8ZT$:?=7
M70,8LFAF8KGD8"N\BNA9Q9L^HS0$1C<TQ]*+TBF('?/QH&VZ_*DG$[Q2_;2G
M.:!9G\Z8D['?J*4'-(F$[2:#1 WZ44QM^="#C&U."0=OQH"'^13S/H*;!S(C
MM%/ /P[4")]*R^,DAMCOG]U:I]<5E<9(T,9[_NH,8$E6>]=#X/5/B6U2J#*7
M<1_457/#WCGKO70^#R$^)[2,JTN]?^350>B)0#L$DQM BLOQ&[R+?ASG+<6I
M'$[980T@*4H@DP`-SC:M,&,`&*S?$"@BVX6XI*]*.*6RO(@J5[QV`R3OB@T+
M-Y-S:-OI9?9"P3RWV]"TYC*>E3\M!^Z/FD34;3W.8;=2AQ(43Y76RVH9.Z59
M'THBK?\`.@1;2! 3!] *12B=I^(Q3!9!.,CUI]@"4XWW':@C4I N4(#+FHH4
MKF)1Y !N">A/2IPE!@:3$4&L%U*1S 2DJ$()3C?.U.5=<R>YH)-"0H ]/A3<
MM,F4ZC'4`T)49P?C1)5)^7>@=32-XQ.V*B2ZCVSV?E/2&N9S-'V?O1&K:<3'
M:ITJA0(/7O0\T*N.3"]0;UDE!TQ,>]$3Z3-!+I05&0)/<"A+:,PV(([["D"0K
MTIP3O,>M`^A$CRF/4 TQ:3*M,R!W`%2!2J%2B9$YB@JJ<;5=*9++X(1K*BB$
M&21 5M.-J/0F9$X[Q1+?"G%-:EE24:_<.F"<08@G&TS3F9B>_6@C4D',$QZB
MC4VDX@F?A3F=*C,[Y[4923]\3WF@A@%:AG8[14'.2;I5O]IK#7,U%,) *HC5
ML3C;UJTJ=1E8B-I%1<Q N"R'#K#863I(3!5&\0=MIH&)!)@_50[T@F=7FV2?
MO#O1$ */G,9D$C\J<CRK\XP#.0`!\:!T"8(4,@]=LT<X&=MY5ZU7?O;6T8?N
M7[I*6&&4OK5!4 VM>A*A`R"H$8[5G\;\2<.X*A7-?2_=: M##1)*P5Z<*TE(
```

```
MZG)Z4%U[B##=\;,W*@\''`@(A<9 /O:8V/>IR8.%X.1*IZU2XCXFX=PWBB[!^
M^)Y=\FW=TJ)3RR@*+I@>Z)B-ZQQXHY? [2\NW&$75QPQU]"-*O,^E[2A$ XE
M,G,?&@Z7S$I\QB!]X[4X;62$A)G ZUYUQCQFKBUE<65M;OLJ=<2E!01EO3"D
MJR2253$5CL<1XZ\I^X9N'UKMP+MQ7E\H0 D+SN!,8H/74M.:0L@Z=,R4F.V]
M,I]IBZM[9^[:8?N-*&6G-04ZH[!(ZDF*XBRL^,WUJW8K;MF'5*/!'.>M6H*=
M^V#IB=M)&/PK(>9\2<<;M4I>7?+O$^UI;:"=2 THLA1@"-MAW&)H/2&N,<"4
ML)7Q_A:-,).IR"",00?A4@XC9IX4.)I?2IE3=TXR@ :GD6Y4%J0)@CRR#->3
M<.\+<9XS;.W3-JOD<EQU#J@8=*21H3@RHJ!$?&MOAG@GB-RA3=_<7EJ6W;9M
ME"$%2>4__/G,1H!\PZF9H.[>XA;HLC<*;NR@LV3H`9&HBZ!T`#5N(,_#$U"U
MQFP=O'K5M;J[EI5PEQ@(3K0&02HD:I ,&*PK;PB[;H92X7KC2+E*U&Y<05@)
M'LTZ3'E,F!@>M9UYX2NE\?#-BF\LV_T<E;ET@+<0Y<<N5H+BB!YE2#F/2@U&
MOX1>#+;4'K._;,KA*64+\O0DE0@D=-L[FKB_%7"PZML.6JT:[8)6JZ2DGG>\
M8@C[,"5?',5@M_P?M,/\/U<4%RZMUM3UF4);!:!!<*5:]4 $["M)GP-PIVSE
M^U6P\%W;>E+JE^57\PN=6Z )C[TYVH+]_P"*N%VRT<IRUN.8N_25-WJ2`+<$
MH.T?:QY?B(FBNO$_#+;A#U\AVW>6BSM+DVZ+M!65/*(4V!$RW$G$Y$@57;\"
M\%6I0N25E+=HA'+:Y6GE)2'20E4$N0<G()G)HK3P'X;M_:2_9+N.9<K<9*7U
MH#+1]UO"LQ^MUH,JX_A$LTW;B&N&NJ:#JDA[G %2-@K3HQC,31W?CKA*"EQB
MU=N%H><2E)A)"8$*"BG!/:MA[P9X6=0L)X<\TL@D+%VXHI,8P3!J@UX*X9:%
M+(N+=2W$LDAYD+)4TK4X4R92%#$#84!VOBVSNT.+821I5;HA;@3YG5%)`D9"
M>IH[[Q=PNQOEVRW%K6T_=-.%!P.7(208B%D8[;GUM+\+>'R#_(6DA1>R0DB5
M@=T_=CR]IJ ^#^ &VN&_8](=;:;"@I.M&@>\DZ=U?>[T&.K^$:V7=6^FSNPR
M0KGZB"L^6$Z?-&^\U)=?PA6'+"K>SO%+! 2EX `))&K(7,P#`JP/!'!3H4E=
MV B)274$*C.?)U^-6U^$^"I4HILP)<=5[Q,!8P-MD[B@K6WBK@MX6[RX4AFX
M;3<J;&KS-H2,`^>-2AL,YZU./&7#DWY9#]FMGVFT;#OM!'D=22ZL@?ZN$@_M
MH#X/X0J![*K*FE$A:HA .H'^UUBI!X5X>_PJVL76]2;9NY2TM*"E04Z04KD$
M$Z($`XH*]S_"+PJUXBE@63ERRU<K;?=;=&@H2Y"5M[Z]2<P8^)WJA:?PA6(!
M]LM[M[6XZK6EI 4$:OLTZ00"=.YGIUJ2\_@ZLWG@JWO;FV1RT MA@.#4$@%6
M5_>(*ND3BKB/`_!4/)*F75-<QM1;E0\J4PM,ZY\YSZ=*"U;^+."+XXQPTN(A
MQ]"5W*W&T,(3H)G7)!(P-.,SG%9?A=^RO./HNK)IQH/<%6MQM=T7RVOVJ().
MTI"3$#W@8S4O\1^'FT=;:64/.VO(UJ;YA"RZE?,&I?E.E.C$;S5CAG"+;@OC
MF_:L4<JUN>%I?2U&6AS4H*9DZLHF?7TH-Q85*AF00)E/>F 5I\Q(`U;D9J2"
M3E49GXYI^XUF9,1&,?"@B6HA"W 0=*%K@.'8)F,?"N?/&>();925\%?O'FFW
M6[))N>:O6D$)$G3.>XK?OG2SPZ[5S%3[,\1)_P"357*-&T/C7@#(8N4\62Q9
MI;<6ZD,`AI,:DA.J(S@S00*_A!=MVFBOA=BXIU"M3:'W`IHA93"NDXG!."*=
M[QW;/VC-X[P>Q6XS<CE,^WN!Q*M!\^F(*8)&3UVJCPB[L;=_P\KB"8#_``MP
M,OM@3;O&]>ATC,D`$9!W&#6G96US;W<<2+-S=M\2>YCJ4 A139E0C $#R](Q
M-!#_`.DVW$$\`:5,S_+E1_W*T>!>,[7C_%$V#?!D6QY:E!?M/,B.@&@=ZPVF
M47_#^!\7ND(7>OL<36M8;"4J5;L:F92F$F%^F>LUI>&'UWSG![UUFW]I4U=A
MQ3%NVR2 IH"0@ 8DY]30=:&M.J4"(3)@4#J2H8"M.V"FIFU20 #L<S&QH'8*
MI,@F3OM04.):E\(XH<@^QO9*@0/LU5Y+J\@G>,UZ]Q0I' ^*P29L7MQ_4->/
MJ5].M .HZ51M-;3+_,MTAMLDMI&J3O6*!,YQ-;O#V%-M*4I*4AQ(*3J%!'SG
M9_F?^M3<]V)Y(CXU;Y!).40/ZPI>SG8J;Q_7'YT%3GNP/L=OZW^%(ON?ZB/]
MJK?(5^LC^^*8VZB=T?WQ^=!3+[AQR?QIN>Y'\SOOYJN^SJG[O]X?G2-LL_J_
MWA^=!<$CK1"-LSUH1ML0*<'/2@+KMMZT05$@C'6F`[[4QV[>HH#^?UK)XV(0
MP9SYOW5J!))&20.]9G&_<8_VOW4&*G<DBN@\'P?$EM)CR.__``U5SZ0=1WWK
M>\(B?%%F#F0YTG_1JH/14Y$E1F>J16;XA<2S:\-=<6HH1Q2U40E.HP%$X R?
MA5]*-S@G^S6=X@7RK;AK@0M2D<4ME (3),*V`ZF@T&[ME5O;.)3<_;KT`*8T
MJ2<^\/NC!,GN*D4Z$+0D\PEPP-*)`P3)C;;K2MU\ZU;>Y3K:5@PEUL)4,QD?
M*B*1)_(4$:GD-O-,J+I4[JTE#<@:<F3L/WT3A2E:&Y7K<)@I3($"<G846F>F
M_H*9:3!@1\@*!<Y*7T,DN:EI*@0@%,")D[4Y6E+B$$N:EH4L0D$0(G/3WA\?
ME0)5+R&0E<K2I6H)Q@=3\ZD4DA(*3 (QM0"7$!]#1+FI:2L>7R@`]3MN:,.(
M#_*U*+A1KVQ$QOM2`.)&?0"D$F!(G'6*!Q<-^U>S:E%[1S8T^73JCWMIR,>M
M.JZ9]L%L5K#@:YN48C5'O1!,@^M+4L'L)_JT"+@^TE@E06&^9E("8U1N1$^E
M!-S6N<60LEQ*=1!3@"8&=IQ3MO-J><:YBBMM(401B"8WVI:E$G,CY#]U.%&"
M)COD4!I6CFJ:YAUI0E9$8@D@0=MTFHUW#(NUV_,^V2T'2G3 TDQO$31:CL5I
M/^T!3*D204F1'O"@C5<-+N%6J5JYJ$:RF# !) ,D1.#UFDFX8<N%VR%DNM)"
ME"#@*F,G'2@]J0JZ5;_Z1* LZL""3&8@[=ZG"E$#:8F-7I0"V^RX]<6R%_:,
M@+<3!@!4QF(.W>I.8R7ULI7]JA"5J3!P%$@&=MTJ^E1+=2VT77%H" MM!A4D
M%:@E(@"<DU@<=\7#A=G<!EAU5TB_>L4ZB"C4R4:R1,P0K'PVH.@5<6Z[U=D'
M)N4LAY2(.$$D3)$=#UZ5'<W]I:N.-7+Q0IIM+JT%*C"5K*4F0(R<5P:O'MUI
M6BP-TM]SB3[S:+E96VEAU.A#9&H>[,C,`YJ&\=XJMU7AZUX?HN$6"+"Y;<4D
MJ*FBI:BE05IZ]SM0;/&_'"N%<3ON'(X9S'&'>6'C<2E0!$D)``'2>IS5=/BR_
MXR5W%CPA\6UHM?M*6[H)"D/#E,I4#[Q"U#.WH-ZP/#_AE'%46CUR\1;7A?;0
MAI6EP*;1J$R-,$Q7>\'\/HM+%QE]II@7-A9H=0R1KY[2PXI1(!29(&023G:@
MX[B_B.ZMN'N\$<L$6JV>'L\*NTN*"R%LN*<*DE)@2501GK6)X<X0/$GB&UX6
MBY;MB^5)YBD%024H4J(&3,1\37LK]E8W/-%SPVR?2Z^NX4'60J7%1J5G[QC>
MK:KBX=D./.*G)3J)`_&@\MX5P7A['$WN#\06TWQ*ZX84%-R@K]FNU.8"=(WY
M>E4_UCG$5UK_`(8X`KQ _P#R2V"5/INV+5MLI"60-!;,B-)49@$9K1?\0</_
M`$LG@YXBOV]*X+ #A),`P3$;>M7E"002H1L/G0<[P[P[P7A/%;9-OS#?-.B[
M05*&L(!TZ00F-.9C?UJ\Q9<;MD\*6E+SB+-39+Q)<6R7),D0(U$5HD28U$C
M;,]_C20B="B5$=I,8501"]0B\%L'@A\@/I:!,D!4:OEM2;<:3>"V0L!XL<P-
MB9T:H,#HF8J5*!&HI4 ,$PHXF?W5&AYD\03:I<2;@L<T-@'5R]43\)Q02(*$
MNM,>1*RDK0B,E(5!,?$_C4:EM)=MVENH#C@*DH(RL)]X@>DB?C4I3( _:DX&
M,?L^E1\N2VN 5 8.C89^E!$>4'D-%2-:Y*4$#40!)/RHBIM#B&RXA*UR$C$J
M@#8;T00-0.@$C8Z!_G_RIM&I25%"=0P#H$B=Q/\`G:@0#7MB$GEEXI44:@G5
MIB#$YC;:IM7E1*TRK,2G.,_NJN@-^U)&E >T**9T:],9CK$Q4S<)*'-'G@A*
MB$D@$"0"=I@?04$FM)4G4M 6N5 :@)[P*<J2D :A!Z:QT':H5I0X\VZXELNM
M`A"R$E2-0S!B1,#;>F<"5.(=4EE3B)"%G3* H9@Q(QZC:@D4F2HB# /WQV%)
M3:5K2]H94IL*T+4`5)!'FCJ)$;5%I25A90A3B)"%J4"1(S!C$^G2C2TA=RAP
```

```
MM-J<0%!*S&I((R 8F@E0V290D0))SZ4M"B 8U"??F@"4\Q#I2DNI!2A9$D)4
M!(GU@?2F6RTNX:><;2I;6KEK(\R-0@Z3TD;_``H$M"M,P0!W48VWJ-Q"U:CI
M5 )!4">U$XRTIQMTMH+R)2VX1YD@@2 ?6*C6RTMT.J;"W4 I0N)4`0) [;4&
M#XNL%7/!7+YA"4W=A_*+=Y85Y"@ZCC*3A.Q$9KEN..L\9X5XBXVR\E]A*;>T
MME!*DE*0I"EB"!C4H9.<'IOZ2BV;#R+@L_;);T!9F0#N)^0K.7X>X0>%(X9[
M'-DA!0$%:Y *PLB9G< []*#E^-<*<*7+RRX,>&6S%E=BY.EI'-U-PE,-J,P<
MYP([TW#^&K?LO#KMCP@V;K3ENZ]>!+2>8V$>;*5%9U3L1F<Q797=E;WJ2FX0
M5)+*F2 %"4*]X2#!H+:R9M4M(::*4M,)9;$*@)!QN<[;Q07&U:5H(4L`=83M
M.]<]86R.'^+GD)=NG0KA25 W#W,5_/D0"=AC;XUMI8B\3=)2LN):+63Y2-6K
MW9B9ZUB6=BFS\4/H97<+"N&-DEYPN*_GU;%1) \NWYT&V5E(,K!(DR5"ITJ!
M)2E6QS.U5Y(&QZ_>34B7=*??ZX!4,4 7H7<<,O&&DA;CENXVA&H"5%! R3W-
M><L^%?&[=ZQ?LL7"KMC3RGO;6BM&D0(.N1 BO2"X2$ZBDSW51I63!"D)VTG4
M,9H/.+/PIX[X>IMRSMKEDMLEA);NFO*V5:RD>? U$GYFA9\+^-;5M"+?AS[*
M$E:@$+:(E2=*C[W5.*])<Z&8)_K;T!:2M,$K(,Q!H/.+?PYXO:7P]M?#[SV2
MP=*VM ;5R]1!60)@DA.QQBNHX=;\35QII5Y87;5K;L.!+]RPA"G5+6V2-*/+
M``Q%;Y"2285TZF*C"$@))!W3U)&]`02H``@QD !'K0*,$>^!!^ZD5(6QD) *
MLX*":C*/= `DGHB@K\2/_ ?%3YA-@[N1^KZ5Y L01C$8KUWBZE?Q=XN9,>Q.
M?= '05Y$H^@]:!DB/J*WT0&603_HQBN?!'XUT(PVT/\`DQ^R@1SUQ-,<9CZ4
MB)/K3&>V*!3(([])IP"8P<4$$@YHH.GUH&.)Q3',DSC:GCTQ33&X,_&@T3*C
M)ZT23&,XI@9Z9Z]*<'UR: AZ4\1U@$]:'X[]Z<1V/QH$3,;UE\<$(MQT\W[J
MU,',UE\:,IMQG<_+:@Q4#S0>]=#X0 5XGM($X<&1_P`FJL #S'UKH?!R)\4V
M0W,.?]Q6*#T)+94"(3!]*S/$:BQ86+Y:6X&^)6RBEIJ5JA1,)$Y.#6LGKD3.
MPK-\2+]GL;%\MK=+7$K990VG4I<+G2D=2<8H+UDM=S9MO^S.LZP3RWVN6M,*
M(RD[?XU(I*PJ(2,]A2LWA=63;XMW[<+G[*X;T.)R=Q)BI8&1I$=R*"'EDC 2
M>\I%.4'290D"2(BI`$B!IW'0`"G*4ZIC/: :"NF1<(;Y*U*4A2PH-^5,8R=@
M<_MJ0A7ZIVZ 4W-2+EIKD.RL*5K2WY4P.IZ;U(I*0!C?X4 $&/=R?04B(Z8C
MH!4F@&#\.V* (23UB,[4"2)).<=XH0Z%W?((7S UKU:?*051$[3(VJ8)3&)W
MSMF@4^E5YR-+TAKF:M'DC5$:MIQM0%!GJ/F*($Y]#W%.0 9G?X4(*<B3'Q&:
M!R "(5$]R*8B%*.3`P-44%[>,6-B[=W"BAEN-1$'<A(V]2*Y_C?BZUL;F]L6
M5*]I86ELK6A4:N9I6F(Z)!,]:#9<XC:B_%HIY0=*%JB%$0`294!$@3B9KGK_
M`,=<-:YC5HBY?4MLA#[2M"4*(@84F<?NK*\0<80Y;K/#7;I*QQ*XN92TM(#+
MB4I2=4#!@_&LK@/"575RE]Y$ML7-J%LK0?M4N.$3\(2<]C0;37&;X</=NDV#
MJW^(LVZ6'EK205V12ZZM0D&#'IUK"N[#CO&.)(0[:J*N(%?$FFP0&_M1J*@2
MJ!(2,$S@5Z6.#6J2VE;:4"SO>(%A#:DZ"T^2F"(B-$5>2GE6[3*"$M--I;0V
M%0`E(@#Z"@Y*S\(*L^'NL6[P;5=VEJI]#RM10ZA:7%QI$:<0!F._6NE/L:KQ
M80A 6E:KG3*B4J7Y2KM)`J>(6H""(SG<P*C%RVI]3)<',;0%J1YL`[=(Z'ZT
M$Z[AU3A"W73OE2B>E 52%&3/SI'5))),SN31@$A1'<]#G:@,E)(WCYTIB8!F
M.U/!()/4&F/OY(D;C2:"!?%K1=R+(<3MC<I41[-SOM)_L]ZE`'F Z[F-\T#G
M%+5=Z+']*6YNDJ(-MS)7.^WPJ0H5).\[@@]Z!CN<&3Z>M% F`,$YQZTM!C('
MT]:)*3Y>D9.-_-0)(D'RIP1N/6@2\@7(MPXUSRWKY0(UZ-43&\2([5* )R<3
M)],T@\T+CV8.M\_E%SE!0*RC5$QO$X[30"D') 3JQ&!47+E:4A(P,X^-3Z05
MJ&X!W^=1E(5HG @100Z"DB4@_(4DMGH-X(,"-JE"$:A"9VZ TP""@?9I,$&(
M$T$22U[2AO[+G*;U`0G7IZD=8F/2I0@A*2 4]X `ID%H72$$,A\M2!*-93L<
M;Q,5*$;$I(QW&:"(@@@$$* ]/6HUF"<_0CM4Y$*&29'IBH2=0]XC/<=J`0YY
MB/IY]\4.AM5VVZIH%U*%I2HK,A)3YHQ\*D!R!K!,C[P[4(:0;UIXI;+Z6BD+
MD%02=Q\)B@D0J=.3L(RKM1:M*D^\!WA5"T""D)6<@?Z0G:EJ!TC6H1OE1[T"
M4N"1JQ,[*[4B8SW/8T).H)^T5\M1I]4`&03C[I[T#)M$>V)ORRHNI:Y*72#A
M),D1,;QG>IC.G"0('45 FV:%\F]Y>FY#!9UPKW-0,1,;U,I>"-0,C/D/>@B4
M)6,I!Z^4;4*6R4@E2# QY?7XT8SZ[3CUH@`4[#KTCK0,E!;5K2$:@3$(KF6N
M!6[?B.X9'M(2BR:7`NW0=1<6-]<Q"1N:ZI*1J,(US,IG<$9VS6!P[AEKPWQ%
M>VJM;NLMBS9A+CBED$J=ZJ/I0'^A69D7?$T[@QQ!WM_;HOT.E,?\(\9'J.)+
MQ]36JE",GEI *NP/3_&F4W!$(P1V`%!D(X:I"@4<:XXC/_XCJGZI-2"RN$PD
M<>XV1'_'$':>[=7M"]0@*!D;%,413UD@R9DB@I\BX0@3Q[C2D@X2;AI1_%FI
M4>UZI_3W&#G]=D_M9HEB9)(,@XU0:<>56H$#`^^:`@+F!JXYQ;/73;DC_L:-
M(>4$C].<6@#<M6TCY%FHSDSJGOYC1IZ>X,'[I/:@,L.*PKCG%1(F3;6F?^RJ
M%=@XJ?\`AV_ F0?8K4__`"ZE*IB#(@R"%13@GS#[V((0:#"X_:OM< X@O]-W
M#J4LF6EVENGF"0(E*017ESL`$ 9&U>K>)5A/AOB))E1:2)B,:TUY.Z(ZYH 2
M92/0UT6S;8'ZHKGFS,8W-=&H%(1G[@H`,C'[*4[8IS@3'[Z8@ZHH%(CTIB3Z
M;TYQM31F<_*@;KMFD3O3D4T4&A$P2?WTXZ"F'6?PS1#/RH%ZS^%%,=*'$T4C
M(_&@:/7X5F\83AC,#/3X5IIVD;=ZS>-_S3)P#*NE!CJ "L&MWPCGQ18[_?\`
M^XJN?2?.,SFN@\(0?%5A`^\N>N-"J#T5M"H,H$#J!_C6;QX\JWLG"A1T<1ME
M!*42H_:#8=3Z5HH0,RG*M_+%9W'T\NPM7N6M01?VRBE*9)^T&!ZT&M;NBX92
MZEEUO5,(>9T*$&,@Y'SJ14F90?I6<_>>SM</*K=:/:[QNV*'T!"F]6H3&?U:
MGNE^SN6H"$D//AHS@C"C([[4%C;[I(ZX%%$"5 P9S51ZYY'$;"U*0I%VM:2H
MD ITH*L",[14SRPS<6C02%*?<<03C 2V53Z[4$NM(<2DI<U*!4"&R4X[JV'P
MHR04@@YC%5U/:;VWMM*X=0XHJQC2`8_&I"O^56]N) =9>=*SI&G04 "/7702
M$[?CD4HS,U5<N>7Q&TLU)DOLN.:RH>724](ZZOPJ07"1Q!NU4 =3)=UZAB%!
M,1'K.]!8@]P<8VH>8#<%J%ZPC63RSIB8]Z(GTF:@%X/TN+ )(FT-SS=0Z.!.
MF/G-$+HKXP.'%(_HOM"5\P"27-.F.^"9H+"B4@JU@)'K5&[XOP^R2GFWS/-<
M;4XT@.I^TTI*MX(`,;G>J!\1E[Q,[P-MA(;2IUM5QS0L. -E0TP(&>LG:O-P
M[<<?N^'6JPA"4-LV:%H;,)1J"03GU]*#N/$?B"PN> WS`O-+M_PVQ?880LN:
M'.>M2TDIPE03IF8]VN5\.\-_3OB%!XBE]YJYYZE/E1',=#:E^^<$S!/6M*S\
M)JON(O\``V&FDM\,X@][7Q0H3J=00$H'+D*@EM4`$@:C\^SL+9GAW$KWA2&6
M5(#KG$F5(0$)92\2GEI3T@)(D;@Q%!2L.$-N6B6.(*45*L+5EZU$P"V5'*X*
M5 G<`_&MM#:&G5.-(;0XI*6RI "24I!TIP-A-1HNPYQ)ZQT*^R90[J*L'45"
M!V]TT[5T'.)7-D&RDVZ6UEQ2I!UA41_=_$4$T85*@2?ZW^%)0!$:@1/>@M[H
M/\1O+-+1FU0TM3FJ0H+F,;XTFC*]5V_;I;4.2RTZ5!6"%E8`&/ZA^HH`@ZU>
M8;'J>U1AYM;BV0N7$I!*9. 9`S'QHB^G]*/V.A7,:MT/E6HP0HD`1_LT*;KF
M7UQ8AI84RTAPG5(\VH1'<:?QH)2D9QCT)[4^F4D=<]^U1-W0<XA<60;5S&$(
```

```
M<43,0L&/^[^-$S<)>O;VS2A8<M4-N+5T.L&/^Z:";0"HCIZ@YS0J!U$0(CL:
M-*IO'[>#K99;>48,0M2P/_AGZU"IYL<478A*@Z+9-QJTXTJ44]]Y!H*BK_AQ
MX@JT%U:F[U$%H+3KF.TSM5T)F1HD_#UJD>*62N.*X9S6_:D#5$S*B2"D9G4`
MG\:L<YI5\NT\W-0T'CY<05%(Z]TF@D"-Y3D3C2/2I0C22-! (_5'>H&W&5WC
M]JE*BZTR'50V``E2H&9SL:E0I"KIUA 5S6K=+ZI0(TJ64C,]TF@)"03A)^$#
MO3)3;^W0`R;T,;>7FAK6/6=,_*: W-NGBAX<5+-R+?VJ- CE\S1O\9H>=:#B
MOL>@^V"TY\\M/F:YFF-7]J<>E!9*%#48(C;'K0=0DZA"10NNL>U"W!5SE,EX
M)TB-(7IF?B10%Y"'D6\N%Y3/. ($: O23/Q-!(#&D_"D@$#.<"8'J:#G-"X0
MP7 'N6'=,""G4$S/Q-.BXMQ=BSYI]HY(N"B,: L))G;=0$;T!)#/M:8+/M7(
M@>[S.7.?ZVF8])J8#8E6]0(=L_TJFW!;-_[*7 >7YN5KCWHVU=)Z5,5MEP,E
M1YBFRZE/0I2I()G;=0^,T JRI/FWW]?PJ((./M.O4^GPHW'&V[AEDJ ==05H
M1!.I(,$SMN14?.9#S=NI?VZFRXE&DY2(!,[;D4##*A+IP1,JQU]*!"6DWB'2
M&3<\G2%2->@G,8F)BI4W+0ND6>H\];7.2WG*`H)G:-U"A0NT_2J&PE"N("SU
MB4G4&=<',1&J,4#P8!*A.-EFF+:@I$ Y'ZRLU,I:$O(9,!PH+J42<H24@G;N
MH"K7Z688NF&5-)YRFBM*,Y2#!.W<B@S.6H$>4S_M4Q0A02")'EDP<9K27Q1'
MM0;6T.:6PYR]9G3JB=N\5F\]HW9M0LFX4USPT"J=&O3J^$XH!1;M>U>T\K[5
M+?+U>:-.J8B8WG,34BDRN$H28'^K.<_&H1[*KBI2WI]O]FE7O:N5S.W]JG4M
MM3_)U)+H2%: DR$ZL'/2@D"0"?(-4=&X_?4B4D$^0X] *A0I*GG&$%*G4(U+
M0$Y )P2/6#]*E"$EU:-$J0C6H!()`,P?G!^E`4K!,MD`@C $G&V]95C:BVXS
MQ%*4/I26K<'GNJ6H&'#[RU$_*:O%3:UN,@2X&R2G2 I*5")P<=8^%4N%V7L=
M]Q-IM;Y2%6Y^V<+BOYM1(E1)H-5*%#.DZL4BE1$F0.M1A(B?/( Z)I"!.5'X
MA-!4OFW@;8S<IL$N3?*MIYH;@QIT>>=6GW>DSB:*X-QP^P26EJXLY</E'#V^
M8&U+;TA6E3JM0)"0M6H[Q\(D??NK1*7K)"+EYG(ME+2@NR8@.$PB)G*3,1C>
ML_DW=GPYAYI'/N47;MZW8"Y0VAA#K7+#"'22D);!41 `.P`H+%K>^TW5I:\I
MQ#[PN Z.8#R5M :D;0H@J&08J.UO;F]9X*JTL''/T@M_6?:$#D(:=2TI9D#4
M)4#&]1V]K>\-N;3B5JPF^NDN7*U6!>0WI+Y!4.:HZ3ITA.V:L^&[>XX9PW@:
M;UEMM=I:WB'T\Y*H<<NFW$C!S*4G;M00IXES;M:%6[B;54AF[#@4ETIG4-"1
MK3!"MQ]VAL>+6MU<-L#[/V@*5:++X4+E(&HD`91"<PH`U)P]KB5J@\.4VTU:
M-(<_EG-2M3^HJ5Y6@04$%?WB1"30\(X8GAR[=H\!X;9^Q-EE-Z E3]YY2GF)
MTF6B<E05/O0-C07 I)6)*8)_6/:F21!)T'I!U&K(2J1C[VVHT!08`4%+5/ZQ
MP*#G?%4M^&;V$I3(0,)(QS$XKS!T@FO2_&8CPT_K7N^A."<YFO,GL$P<4"1@
MCXUTCI(([Z0*YML>9/\`:-=(\!S,'8=J"-)B<G;(II.].1N<TY!Z_6@'YTL1
MM2"3G-+83C]M`TG>F(@G%(P#-/&V:#0&W2B ,Y% "#THA- \_04XW$[THS2!
MC,4!5F<:)2VS@021GX"M&,A70]:S>-I_DS'3*MZ#!$ZL=ZZ'P>?_`+6<.!P2
MM0$?V37/``5BM_P@"?%7#1$DNQ]4F@],2DY,B.T&LWCI#=G:N!"G"B]MB$I3
MYE'FIP),9K5;0J,@_&*SO$(T\+0XIE:]%TPK0VDE2@'4X ZD]*#09"W+=IQR
MW>MR3/+?0-22,="1\,T2DG$HF,@Z"?\`.YI[)Y=U:-OFTN6"HD!NY:T+$&,B
M3\JF*%?J;C]6@KEL*4DE/F3L2G;X490"!*1(F/+@8Z?YZU+R5D"$8&\BG+2]
M^6(STH(#I#S:2VI2E!4*2V(2`!.>D]J.(*5:0" 0#I$P=Q^SZ"B7J2\TU[.X
M5.!4*2U*4P.IZ5"[=6C+*''KVR9;6I2$K=?;2E2DX(!4<D'?M0$4)4H**$E8
M$!12)'>#\A3I`"M00G41[Q F)VGM5<<4X6?_`.,<,,;Q>,G_`,51KXI8MW/#
MD)XG8%IZ[0ATIN6S#<*)R#C89H+B5,*N6 GEJ>=>]E1I(*@K2I>DD;"$DP?2
MN2\5\?8M[L&T]F7Q*PX@%,N<K5+/)&"H;^=2NO08K+N>*K7X/O+P7J4<17QT
M.IY3@0O1R%)E(!F.DT'ASA5NIF\9<>M%W%[P5;C(>6A 9=+_`"P-2CA4)GO!
MH*7 >&K>L>(7`=NK=]BW2NV<;6IL$J7H),;B#T-=GX<\,.\$5Q>TO+CFV]RE
M@H=97I)6VYKB"28D#ZU<X396MKPJS:O'[5RY:M$VSB3<(6B HJQGOFM3GM**
MC[2R2K,AU/YT%A2RM];J@-;F%*G)R3$QMD_6HR$AU;W*3K*-)6(U%(R 3VWQ
MZTQ<220'$F#T<%.H@I,+^['O_E00I>MC?.M)"!<AM)7@A13)C,0>M3)0A+Q=
MY:.8H!*G(\R@!@$]1DT"%MN/N6R5DN)3K*).`9@_@:G2RX5>5+AC.RJ!DH;2
MXXZVTA#KD!:T@!2@!B3N8D_6G4@25Z$!Q:4H4L#S$)F 3Z:C]:E2R[G[-WT.
ME7Y4PMWE`@-.'K&E7Y4$"FF^8X^4(#JD!*E@>8I3, GTD_6H6W+,7]PT@M^V
M!M!=A)UZ,Z9/7K5[V2YUD<AV(,>17Y4`;>4ZNW2EQ3J$A2FM)U $8,101)8:
M#I<#8#BTI2IP2%*"08'RDTZ+=IMY]Y"$I=="4N* ,J"9C,])JR;2Y"T_R9T'
MMH5V^%&+*Z(5_)G\[?9G/X4%72CF+=).M:4MJ5!DI3) WV!4KZT*K="KPW(0
M"^6@V5:3)0#(&_J?K5U5G<@F;5W<_P"C-"JSN)5%NX,?J&:#%1>\+7Q5QEM]
MDWY3RW$@DN0),$?,FK7);%RI\( >6WH*HW2#(&_<FK2;A#MU[(FYM5W:5*!M
MP4J<GU2,S1&TN"DQ;KV.>6:"FEI"+E]X)',=;#2U09T@R!O'4U*&VTO*?"/M
M5M!LF/NI45 ;]U*^M3N6;X*AR%F9CR4ZK9\2GDD;SY(ZT%/V-@7QOPW_`"GD
M^SE8&[>O7&_<S\J -6QXNI[R>VBTY>D$2&N9/NS@:IJ\&'1,M*C^R*A4V@7!
M;"6^>&Y*?+KY>J)C>)Z]Z");:#=>T0KFALL@S]TK!(/S`H%-?RE+XU!8:Y6X
MC3JU1'QJP1YE& $R-H[TP08,#([$'K00(:0FY-TD'FEH,SJ `2%SMWFG1;LC
MB"+TZN<&/9P=8 T%S4<=Y J8`!(R1OB1WHH(`RK29WC&:"#V9H<7-^%CVKV0
MV^DNB.7S-1,1/O0)J94>UMW&LEQME3 `4-)2I0))$9/E$'U-"66$W1>AM-SR
M@@*D:]&KZQ,_.G4J%*@#8??]:")3+;ETQ<K*^<RRII,+A,*()D1Z#K0&W0N\
M;NSJ#J6>3 7Y=)4"<1O@5+KQ,9@;.&FE.-2CL-U'O0`BT:/$F[Y1<+X8]G U
M2D)*PHF(F92.NU&FR;'%$<4!<YWL9M-(4-&CF!1,1,S'7Y439\HD$@'[JCWH
M0Q;B[]N4R/:@QR0[J)5R]<Q\)H)'&DJND7)*^:TPM@"?+I4M*B>\R@?C4:F6
MU7;=T2HNML%F)\NDJU3M,XHU+ ,0J-C"B>OPIM42?- V$$]:`46K!O!=$+#I
M8#&D'RD:]4U%[$P>*?I+FN%WV3V31/E2CF:Y'69]:G3$)&1IF `?UJD\H&D'
MO0&#055\/;1Q)7%$J<YRK<6H!G04APKGO,D]>FU";9";U=XA2BM3(:4G)&D*)
MG\:E-HPF_-UR(NEM<DK,^YJD")C<GI1Q((C$&@KILTM7MW<I*RX^TEI2=!@!
M)*I'7[WX"I2A'M#[P*OM66FM);,`(*R#]5GZ"ILJG B2=O2F)(W2F3MB@I&T
M:7=W+RPI2GV4,J1H( 2D$8(S]XU#PBP:LKCBS++:TI1<6X^UU+()8!W42?O5
M?<M4W#+MNL:D.@I4D2DQ'<$$?*J_!^&,\/1QBVMV.0RW>,#0HJ5!]F;)RI1.
MZC06"D@"$B(SY<U&HJ(,`Q QI%3K;)$'01/^K]?C4?)E2D0G(/W /WT`C4%'
M!R3L$UB\<XS?<-XDXVW=6EOPMBT9=>>>M ^L..%0`"002)$>E;JVE)"O("!D
MC0*Y'Q>R[>*XQ8V;+MQ=K:L.7;LHUN:0'"M02F3 QGI(H)+;Q)QJ^5>KM+WA
M#UO;\/>X@EQ5CI6H-$ I*-4I))@3O@U3L_&OB._L4W337!RY[6BT2AYCERHH
M4O45*6 `-,9/6J/A+AMYP:XX^Y=,)0^/#EP_[,ZD%28<2D!QM0D;3!&4D'K5
```

```
M#B?%+CB7@9+S]O;-G])I0D6ULAI)`94<A(S[]!V%KXBXTKQ3P_@O%6N%$W-J
MM]Q5JWEO[-:@`H**3E R)$5T)>(5IUMY/ZP_*N!X4H_Q]\.)"2 C@;>T9FU6
M?_%7=D*$DZ@F>A% 6L""2C^]_A3J=&!J2/\`:J-(.H'S$;1J`H5+&K(C>/M*
M#G?'1T^%S"1)O&AOTTJ->8JD>AKTOQVHGPPC4DD*O&LER8.ARO,U`8]/6@=O
M=,Y\U= [<!8YZ$**%& #$UA,I)<0D;DXKHDVZT6J&BD\Q.#!Q05/:?\`DEQM
ML*8W2 3"%QZBK?LKI5 ;6?D:8V[DX;43_9-!5-XU&R@>N*87C6\D?*K)86 ?
M(J/@: M1ND@?"@@-W;_K@?*G]I:)G6*DY*3$`YH0RCJ,T&F-\YHP1./E48S'
MF!%%!!$G% 8$&>M$)W.9J,9.\1UHI,>L?"@('/:LSCD>SM8^\?V5I"<36;QK
M^CL]/,<?*@Y_[^16YX5<CQ1PR3 #W;T-81(UGO6UX6SXGX;$"'T[G>@]1;=<
M.[A CI-5./.+3PDN`J=Y;[*BA(E2H=08$]35EJ-6"GZU!QL)3P=Y83K*%MJ"
M0<J/,1C-!H6CZ[BW#G)=8.I0Y;R E0@]8)'XU928&5Y[!-5;9:GK9+CC"V%E
M:I0N"1!_JDC-3IW&$GX@T$A*Y&>F,4XDD9SVB@@$Y2D?!-/">B"3\*!U.*#K
M* T\LN%4*0W*4P-U'I7+V_"O#=U9<3?X@PB\XE:N7KSEJ+]:%Z$$D>0*\H(`
MS'4;UTMRO1;D(2X5J2L)*4QI(08),XS7G_"[KA]CQ!R\M[6]3;<1X2[9M.<A
MQPOW:T *`))))61\XH(D\.X(I'@Z\7;)L[7BUW<"[YERH)2TFX"0-9(TPDD$
MB.]9#/"V;^\XO[/<E#%DAUYK0GF!:$J@"=74$9S5Z[L.+\3\,,\,/"/9%^&V
MWEW!N'=#BPZ2Z/LU`=$``FNRL?#C;/%V[T,-?H^\X:EE]AM*6M)A!QIW)R28
MZ4&+P#PYP:[O^%)NV'E(?X0;IY*+A227.<E (C;!VJ_PCP9P9-M;VO%N'//<
M1Y*G'GF;A09_G%) "MITQC>NBX=P]'#K:U8`0XXPUR$O%L!>C451.3$QUJXI
MTE_DC7J"-9.@Z8F/>B)])F@Y\^"O#(D)X?<]=KQ44/\`$?PVH2;&Z]?Y7/[J
MZ+23N1GUIM)'WAB@YP^!/#)WM+J.WM/_`.VHSX"\-DZ0Q<I/W2'QC_JUU"<;
MK&!2)@F%1C::#D#X%\,*N%-!%]K0@+T\X1!)C[D3BG/\'GAW9(O .GVJ3_X*
MZKFH4X60Y*T("B#,`$D;Q'0XHH@^\">TT'(J_@VX"L2%WB?]M'^Y4M]X%L.)
MJ85><0X@^;>W1;LA2F_(VD>5(A P*ZI(QE7?J<4ZT@C&?F:#B%_P8<'3M=WF
M/['^[0#^#;@RUJ93Q.Z#B0%J; 02F=B?+Z5W)$J5/8QO4 <:5<N,I4.:E(*A
M!F#M^^@XT?P5\-4?_6-WG_D44X_@HX:#/Z6NAG/V"37<!(U"1TZCTH@`)@?A
MZ4'!G^"?A\&.-70$_P#%D_[U,?X)[79/'KK/3V0$_P#?KO5)E)@&?[-.4JDG
M3,=Q_C0>>?\`H[X4NY-JCQDVNX3(+"&D%T1D^4.35[A_\&G#[*XUWO%;B]:T
M* :+):A485(<G!S'6NG;N.%KXBIIM=@;X%4MMEOFS&9$ZJO;&"DD$$$1^%!P
MR?X,"@*T^*;U!&"D69Z?^]_*C'\&CJ)_^UM]D?\`%#_]:NWGWB02,[@>E2$9
MV[R!0<,/X-GT$QXNOL2?Z*?_`*U"/ 11<*T>,KH7'+!4/9_M`C48)'/D)F?2
M:[R=*E=H]*K*]G]L) 8-V&AJ(">9R]1B8SIF?2:#D?XA7R0$#QCQ%.DS/(.<
M_P#/TZ/!/$D+)'C3B8($_P`TKO\`\_79&)@3I^/K2!,KR8@QC;-!Q_\`$WBN
MJ!XUXFF=X;7_`/7HAX4XT(/\=^)^78:%CK_SU=>4JC<=9^M.9S!Q'0T'%_Q5
MXJF]+J?&EZ;LLZ%*T*YG+U;?STQ/XU*?#WB%.WCCB! ,CRKQ_P!K74*0R+XK
M2ICVLM!)*=/,+>KZZ9GTFG7.25 0=OG\*#ESP7Q,"2/&MZ9$&4GX;<RE^AO%
M0P/&=P,=4G_>KI<DG[0>N?6B!/ZVX/WM_-\*#EQPKQ><?QT=*CL"A7?XU".!
M>*4WYOAXO2+XLAHO:%:BWKG3MMJ,UU^HXAR2"=7F]W\*KE#7MA>^R1<<H(*P
M?,4:I G>)GZ4&$FT\7)MR@>*&><7=7M!;7KTP1H]V(DSM4%RSXX996XUXL2\
ML1#:49.0#NB,`S\!72F03)&_ZY[TZ2)4"H& ?O'O0<^;+QVEQ21XMM8!(G0<
M^O\`-&F+'CV"D>+;2(ZMD?\`R*Z121.X`R-R*2L*,[@=SM0<DWPGQNS<JO&_
M$G#T/+;Y9<T*/E!D)@L=R35CV?\`A!) 'BGAOI+4S_\`X]1W7$+CA7B+BI<0
MJXMSPTWC,I*-'*G4WJB522DR=L8JMP^[XO=WW#.#W5ZMBX-C[?<W(82'"5'2
M&]*@4ITSDP28Z9H+XMOX1(!_C1PPSM]A_P#\]#[+_")@_P`9N%$_\P/_`/7H
M;R]XK;O<%X,[<,HO+Q3H=O6F<Z&QJD(4" I0B=P#, XK7X>U>L-N-7K[=T0Z
M2T]RM*B@P1K `&H&1@`$`'>:#'?X5X_O[=RV?\1\(6R\G2M/(B0?46\UJ>%.
M&7'!."WW#[TMNW3-^ XMH'2HEEM0B0#@* VJX[;INF%,J;)0M(!T!23OW29%
M%P^Q6R>,LVUNX6T<1$"%K4/Y.SU))^IZ4%B "829D"D$`SY#.0<4QM+DHGV-
M>DY/V)S1ILKK,VCGO?ZG'[:"-S24D%!*#M7)>)?!?$^/\<5Q&ROK*U8+3;4N
MW"T+\J0-DI.*[!5I=R![$[B('*(Z4R;2ZG%F_.\\J@\X_P#1CXA2I1/%>&2X
MG0I7MCOF&T$Z-O0TR/X,./!H-_I'A.@&4H-TN 8B8T17I)M+L*Q:/F.[9_.D
MFSNB0$V5R8F?L_\`&@XKP_X(XOP;Q!;<0O+VQ?:::<:*&GU+6 6RE(@I`@2!
M76Z08EOM,@59%K=P"+-Z(WY9FA3:W42JT? *?U#01!*4#2E$&3,)%1%)E*="
MLF-DXJZJUO.62;)X)C'V=";2[@K-I<1(GR;4'%>/I'AAG*I]M;P0/U',UYFH
MRJ:]2_A$:?1X<MN:TX@KO$E.H$:@$+V^M>7K$&!O03VG])9$YFMU[+BOC6'9
M)F[8GO-;;IEQ77- .J$YI!1/4_6F/P,4W88H##RTG"B!1^TO@8</UJ'TFFD[
M3B@G%V_.'"?D#2]K>D^8$;>Z#^ZH=A3&!@3]:"[VSBC[SO\`&HQ)HIH#F*?&
M^HT$YBBR08 H# WC>L_C&;5LD?>-7@*S^-'^2M1^O^XT& 1"B/I6QX8G^,O#
MH )#Z36.H2HUJ\ 7R^/</)_XPB?A-!ZTT-I)CJ)JOQD1P.[6E)4I*4J"08F%
MI,5:;,*VV,5'Q8D<`X@K22$,ZB 1GS#OUH";5=%A*U\.<:>+NA3!=22E,QJ)
M!(CK@U:6E2 -#:G?M$I)2=@3&K/0#-+F*6M>NW=MSK5Y'7$+)S_4)'XU)\X.
M-C00JU!3<-+6%+ )2#"1F29Z?C1*23RP&U*UJA6E.$B"9.?0#YT8!!!*I^)H
MH !R3GUH(5I(3I2TXK6%!6A&$"-SZ5SG@]AJY\$\);>94XMJ[>?0I*?<*%)(
M,C;('^16GXH44>%>(E#3KA+)@H'N9$E4D0/A-4_!2B[X0MM\7#V(G]6@U@S;
ML<2N70TI3O$`!<$IU(/+1I&J<#"B(ZR:E"TM.(:2% J22-*?* (&^P^%&4YC
MJ.A3%/ ]<^D4`AY//2R2HK*>82$8`! WV&^U'ST&Y]FUKYH;YD:/+$Q[VTSZ
MTVI(`QB=H% EX&[%N&UZRV7-6GRQ($3M/I02%Q'.+96=>@KB, `QOMUVI)N&
M5.*8"SS0@+*=)B)C?:G"CMT'K2"I!P/2@=*F^<69/-2@+(@B`20,_P"R?I0*
MN&/;5V@5-PAL.E,'W28F8C?UJ8K.,3GO328(S &?-00FX94^;5*B74("RB%1
M!) .T;SMFDFX97=.VR5!3S:4J6CS>5*I@SL=NAI_:6U7*K8*/-2V'"F#`23
MZ1N*EU&1G'3-`#3S#K[ULA8+S(27$C5@*&)^,4BML/K8D<UM"5J1GW5:H/;[
MIJ4$E1,X[31*)TD:HD]3O5B\TJ[=M@H<]*-:D29"3@'X&#3(>:6\XP%#G-A*
MU($^4&8)_&K'F5J@F3T!.:KMOLK?>MP[]NA"5+0092"#!_ T#H>:7<.,!22\
MT 5H@RD$8IVW&W7WF&UA3K(2IQ"=TA0Q/Q@U+IR .OY49]Y<228D$;T$14.:
MMH$<U "E"-DJF#\X/TJ-2VU7*V-2"ZE 66XE6D[&.T@U,4P")]#C>F6 H^8Y
MTQ[M!0:NN'KOEVZ'[0W@*@I*2C7,9!Z_^=7 M!<+86G6G)3B0",?O^E56^(6
M#E^NU9NK=5T->II!&K&\@9[_`%JV6TAPKTB2()TY]/VT"2XA;KK27$E:(*DA
M0E(.Q(^1^E3$C64<P$P%'()@['\#4:4A/,4``5;JTB3&WTDT9 "BHI\Q`!5
MD@3 _$_4T#%0YY:+@YA0%E&I,A)Q,?(U$ SSE*'*YQ3I*H3S"G48!.\3)[4:
```

```
MD(+I7H3KB"O2)C<))[;XJ(ELNE"%-A[0)C3K*9,3UB0=Z UJ'F&M.H F)$Q-
M2>4E1*DX!D!0P":ATI#A6&TZ])!4$@&/4_7ZT@E"5N.!I 6H0I8`!4.@)W(W
MH+*@`HYQDCS#;I^RFQ"@")B8"A-"E4+4M(0E:AI4K$D#I,>I^IH5(;+O-T-%
MXI*2YC61OIF)B23%`RFV>?SDM-<THT!S2->F9@G>)G&U&?(3! D]".]1Z6TN
M\P)8#I1I*I 44SCUB9^=`$MAPN!M',4DIUP)B9B8VZT$X)A15MI,RH=Q\Z01
M`)TJTB0,[9J$A*5..!ML.+3H4X!YE ' )B3$FI3I+BEAI'-4G2M<"2D$D"=\
M9^M 0*D]Q _6W%1*:;#WM'(0'E-Z"N/-I"I"9[2324VUSN=RFP[HY8= &HI&
M=),;3F*9;2$++P:0EQ2-)< &J 20)WC>@ B$F4DX.9-2\I8!`PF%02HR?PJ,
M-MA9=#2 XJ4%8'F*1D GMDT3;;:'''$--I<=@+<"1J4!L"8S% ZD. ^Z"#,^
M<B,?"@6E4J!B0,^<]JEA,K<2V@.*"0IP#) F`3Z2?K42DH+RUI;0EY20"L#S
M* V$_.@P_$7A&S\0N6KK[:;3C+Z5+7*B7&P,MX(B<9W$8JQ?<$?<XJQQ:S?3
M;WK37(676U.(<:.=)3((A6001ZS6NEI*%+="`%.%)6H;F!B?E22TTVM;R6T)
M=<T\QQ(A2](@3W@8H,![PZ^NVX<X;]U7$[)2W$7CJ-045G[1)1(&D@P`""D`
M0<9NV%A=6K2_:[I5RZ\[S"LH4A* 8 2A.82 !U))DSFM#EM)=6M#24+<@NJ3
M@N$"`3WQ3)992XM2&4I4LZED$^8X$GY 4 /6;=Q;J8?8YC3B<H5JA0F>F:R6
MO#_"#>\5+O#&UJ;OU- *4Z-*0VV8PH8DFMD</M7D/V_L;2VWUE;S9!(6J1DY
MR<"JG#[=I@\299:#;2>(.Z @D `(1M'3%!5_B[P0G2.$LP9$\U[_``Z/^+W!
ML3PQ/^R\_'_?K32E``WHU=29F-J?3D>8QT!)H,<^'N"JWX<H1D1<O_[](>'.
M$ B+-X&-O:[@?_,K60T%&$ J) F%'%/H5);"25B1I).\_&@QCX>X2"";1])C
M;VNYC_XE)/A[A6K-M<__`*RY'_S*UBU#J4Z%XG>?SHFV=6D)F8&TT&0>`\-2
MO#5YT_\`;;G'_:42> <.4(T7LY!_EUQ_]2M,M!2CJV $R31*9(!@$)Z',&@R
M?T'P\J(2F^F8GVZXG_XE)O@=FKS3Q *C?V^XG?\`YRM0MI"U2E1S&)_.F4V$
MH ,C80J8-!P/CBRM[2RM'&C=%:WCEZY=<! &_G4<YKA5D2._PKT+^$(:+#AB
M=,2Z\2<[@-X_&O.W#$YH+G#P%WK([BM9P>=59?"DDW['P_<:U'!]JN"<DT Y
M[X[4^V8Q2@D[_2FW[Q- B!,S25';(I9$`4) D'K0/ZTP,D]*?X&AW $YH+HQ
MGK1C/I\JC F.W:B!Z0<4$@^$TXQ\: #L*<X-`Y.<?LJEQC^AM3/\Y^XU=)D9
M^E4N+DJLFP?]8/V&@P"?M#6CP=11Q>T5$P\@Q_M"L]0AP_&KO#3IXC;'&'4&
M?F*#V<H)4J209VU"J_%DI;\-\7423IM%J(!WB-JO+0>8O4E6K5M@56XLW'AO
MC((/]!<V([3^Z@1OTKNGT7#;MLZE]QLI<)5[J=9R!$9CX@BCM[RUN##=QE(9
MG4%)_G2 C<=9J52GU/O*?9##FL@`/AP1\0!WIR9/OG)/WJ"L.*6(*S[6V$HY
MFK)_T?O=.DU8:N+5XH2W<-+4IU+6D+DZRDK VWTB:<K.Y4J8_6IPZLD$*,]]
M1H,CC=VS?^&[NVX<A7$'[NU);1:#64IU1S#_`%921/I4?A0\.MO"]@TQQ%E9
M<"G5ZW4DI64@J2(C8"I/%U^BS\)WWM(4L7:#:-D=%J!4"<[>4U-X><<'ACA3
M>HA0MD@@@B/E07&KNS>$M7=JZ $$E+B3[\:.OWNG?I3&ZM"2D7=IJ"EB.:C&
MCW^OW9SVZU.'' (*IC_/Y4^M:MX,;8G_`#T^E!72[;J(2E]@J)0D#F)DE0E(
MWZC([U"CB%HY<^SHN&R?9UW.L*24!"5:5$JF,']AJ\I9US"2=0.4@YC%1<Y(
MN_9O9E>9DDN!@<K3.4D]R3,?&@9=PPAU32KEE+@6ELH+J0H*(D)(G!(R!UID
MW+$$FY:@I*IYB=IB=]IQ4ZM.O7RVRO4%E1;3)($3MOO]:AY3(;Y99:TJ2$D:
M$Y&J8V[YH#"T*>Y:74E>HH"0L$E0R1'>,Q0E]I)"C<-@%L. \P1I, *^$P)I
MPRS[0EX--AT+4L*"4R%$`$[;QCZ4#EG9N(TN6K*@&DLY0GW$G4E/P!S0&7FR
M^JV2XK6D$E))W[?'TWHD+"S*7-0@&0HG!V/SJJL6SEXI"V$+7)?U<ORZE2@F
M8C5 ^,12_1]@=*?9&(2$)&E($!!E(^1S07Y*09*I)(S.8&?WT2TJ*9"5'$['
MKM6>YPZR?5+ELTHI6\H%0S+HAPXZJ&].[P^T<M3;*M6E-*::8T$8"&C+8^ )
MF@OZ%20$J!R,`[U&AQ*W%VX6E2T!*RWDD S!CUS51'#K-"RI%L@?://=??<3
MI6=]R*B3PWA14JVY+6I"&OL@5RE*">7.=AGX]9H-4-KDPTJ1OY3VIPVHIG08
M/]6LY/"[`)*?94*20\F-2HA[^<Z_>_#IO16W"N'VH6&+-MM*A;A0"EF>1!:W
M/W8'QZS-!H+:<R.5YY,#2:C+3@4O2VK2/ZOI5)/!^'MW`N4VB0^'7W@YJ5[S
MR0EPQ,9 '3'2*%W@O#G$:/8O*&66`G6Y_-M04"=70CY]:"TW>,N7"K=%U9*N
M!J')0M!<Q$R-ZF#2I_F\)C5Y?2LYMO@KKZ[9+UFY=%3Y+27R7 7$D.8U3D3\
M)Q4AX-PTA,6>!RHEU9_FA]GNKIU[]9H+W*<4A0#?EF?=VQ3EMS;1!^ JO<<,
MX?</:W;516E5R00ZM/\`/@AS8]9,=ND4GN&V#O#S9K86&"TRR EU0.AF2@3.
M\DR=SUH)EH4%*.G 2=@.U00V7EQH+^CS@:=03)B>L9-(6=FAUQQ#*^8IY]]1
M#JC*W4Z5XG:"8&PZ55/#N$J660DEQ#+2%#VE7,#;:B43F=YR=^M!;()F!C/:
MG,:E#,YC;M0JLK,B5MO*.M]0)?4/,ZD:COZ"!TC%,U9V;04$I?A2&6U3<*.&
M2"C?K*1)Z]:"94I40>FY,4RM4X&P(B@;M;9B\%VW[5J#[SP2;E13J=2$D1M
M`$#I&*BN+&V>9Y:EW@2+9JWD72AY6R"DG^MC)ZC>@02R;I;B0WSRC252-6C4
M2 ?29HR2!DGKUJ,,V:;IQP+?#Q+CBP+J%$+&F(WTXP.A&*C%FPV@D.7H`2TB
M!=*R&\B2=YG/>@LD97,@R=S\*)2DZCF3_;BH7[5I[S&XO@4KN%RFZ(DO)((V
M^[/E[5(MII5HIDNWH!:9:UIN2%CEDD&8W,^8]:!U*R<D'22//58-,"Z6^$I#
MZVPA:@?,4A1('PDFG#"&BH)N;Q7G><@W$C[1,:8[#H.E0&PMS<%:;FZ2Y#"7
M%A_S$-24@F.LF>]!<"@1YLZE'[Y[42508!TE)R"HX[5$EE*4Z1=7I26WDG^4
M^;[4#,QNF/+VI6S/L^N;R]<"C;J.JXF.2 (V^]'F[T#J(B=.VYUG%.%=25!,
M^M5W;=2C_3[X`AT`>T2 5]O+]V,=IJ1H*2\%IN[M0#K:]"KB0824Z3C8S)]:
M`V6FF7GW0U#CA2IQ0)DD) $_("I-8"1"521!$FJ-O9!E%Q%]>E;K"V'""^"=
M2E%06?+[X!"0>PJQ<A;UVI\7MT@<]+G*2_Y `DIT`:<`X)]10&7 =4@[#J>O
MRHM4*B"1!$F1^ZJJ&U!DH]NO0KDA!5SQ)TK"I]W>/+\*E0AQ'$?:O;[PD7#S
MRF"^-!#B0-/NS"<D=B:!7=M;\1M'K:X8#UNX`%H5,&""-O4"J7!VFK6VN&[9
M'*91>7"4( .$@Q&9[47$+!F]X?[)=W=PID-,-J2IT:5%M05J((W41!J'@'+;
MX5#*4I;]JN= "L!/.7 'I%!KI4G2-^YP>U-J2#O': :$*) A200.BJC4LA1\
MV<??H,?QJI/\1>,$$R&VP-Q$O-C]]3<0XI=O\%N+&SNBQQEE;U@_=K Y:W6&
MPMY8`!\BP%A..HP)Q+QVP7Q;@%[PQ+C;*[D(25J)(2$K2O\``35CB+1O'[^Y
M2ZMNXN[,VFHKE*4@*TXW.5D[]J"@S=W5KPZW]C3:BVX79,/7X?2LK6W[.EPA
MDI,%6D'WH$QF*;Q9<WQL_$'#>&MV89L;0-WZKH+*U\Q"5CDZ<2)CS=AO4KUE
M<*%RQ;W+2;6_MFV;U*T$K(2R&9001IP.H(S3\9M+F_N.).VS[#2.(A'M0>2I
M:CI"4C000!Y4B9!SF@@N..,VW'_T>W=6*66GQ9NVSG,%TMQ1"0IN/)H!4DF8
M( 5@XK?6I*75H(E(48R?RJAHO&;^Y3;7J6>'W%T;I:$SS=94%* 5,:3 !!&
M3FK2U%2]1P%+R2N:`N8DJ!&=C$&@><3,S'I!/[J0@)2 LP!@:O6HU @F"2"3
MNN@XW^$@DL<()*BDJN(D>C7Y5YVX/QKT+^$DRQP22"=#^QG$H'[C7GBQ0:/"
M/Z>UJ. G/TK07E2L]>U4N"C_`(021N$5=F3-`PP,3,4MIC'RIM)C!%+I0+KO
```

```
M2,G;\:1@#I2G$B@1,=:'<2*<D'U--'6!':@M`T4GIM0"B*HV_902`]"=Z??,
M0: =)IP8- 4F>U5>+?T)O. YO\C5F<"#57BJ?^#T9SS4]?0T&"8UF<59M5)3
M=LE1`"742?F*K*.I>:E;4$N(5$PM)V]:#WI^4W#L`J\QS'K53B\CP[Q=('E-
MD]U ^X35FY3INGH$0M48JIQ12AP#BH,D&S?'_9J_QH+3;]ZZIY=]8"S7K&E
MN$NR"-Y HH)F%?CM4"WK]27G'K!#;P2DH;3<!05CJ8Q^-$ZMQ""6VPHX\I6$
MR"0"9],GUH#5J,>:3$3-"0H#)_&GN5+0THLMAY04`$<T(D3DR>PSM0OK6DIY
M3?-E:4D:PF$G<Y_90<WX^MW[KPW86ULG7<.\4:0V@$#4HMN1DXWBNHNB%73B
MDD :C$'I-<EXB??3XV\+VW-<5;*N$.*9U$HU!<:B.X!_&NG>+@4V$6ZG`I<*
M4%@:!$ZC._3 [T"E) C,;T0``0_2HU%:5-)1;K6A9(6I*H#>)DSOF!BC=+J7
M6DHMUJ0LJUN#W6X$B?B:`I2")3GX4R7 'PWRE@%.K5HE,S$3M/I0K4I+B0&E
MJ29E83A..M+42\&RA<%)5JT>41T)[G]U!("#L#'3%,224S^RADAP(\WF253I
MP(($3ZS3%?VR6@E<Z=14$X&8R?G^%!-F1!BBS'[ZB#@#_+,Z].H>7&\;]_2E
MSDA\L2HN<HN$A)@)F-]I]*!^8%.EJ5:PG5.DZ8F-XCY462K*L4"GVR^+8*6'
M-',"=)TP50,[3@XWIP\T7RR"2ZE&LX,`9Z[=*!Y.8('SHE"(\X^()J-+K*GW
MF0LEQL!2DP8@[9VHBXA3ZV ?.A"5J2 <!1(&=ONG_"@13!)D3'>H@M"W5LA4
MN) 4H9P#MG;O1\]@W2[0+EY#8<4F#A)P,Q&X-,+EH.KMTJEU"0M23. 9CTZ&
M@,)!*9'7%$-(U",_"H6[AE=PM@+!?:A2TYP#L=OC1H>9>?>80H*=9"2XD ^4
M*VGZ'Z4$BM)3[N">U"4@+4(P1V]*<K075LB.<@!2D0<`S'[#]*!3S?M;ENE8
M+R4!:F\R$F0#]0105F+KAR[];+#MJ;L:@I*"C7MD=^M7`/,(3CL!/2J37$K%
MR]<MF;EAR\25:T)/G$;S]15I#R57"V4K27F@"M &4@C!(H)]4ZO*1\J<J^SG
M29'2/2JZ;A#EPZRE:"XT$J<0F)2%`Z9^,'Z496"7$)6"XE(40-P"#$_C0&M0
MR #D=OA4`6PI]T(Y?.T@N0!K`@Z9Z]XI%Q//<:Y@YJ4!91(F#L8^1^E)):YK
MJ1RN;I&H@)U1&)_&*"8$[21DG;TIP>T;Y^E0)<2MY2 XG6F-201(E.)HT+2M
MUU"7$J6WI*TA0E,C'U@T$AD@9CT@4*E:5'/3(^5"I4%2=:3I$D8D`@Q^RA6L
M%:D%20L(!("A(!&]`(#0?>4GD\\)`64Z=49B>O>)J4R04B-_W5$.4'EJ'*#A
MA*H"9VQ/7K^-$'$%>G6E2DQJ$B1(H)3)43,B?W4BJ$>]G&?E0)<25J2EQ)T1
MJA0Q(Q/QH-:""E*DF(G(QB@=15J5"L$_NH&TM\]Q22US"4AT@C5[ITE778]:
M=2O>A0)!VD8D4Z$-(6M02V%JTZU #4<8GOCO0$ J$^88C)BDHJD#5 (SFFE&
M0E05I@*&H8H2M.H@*!*8$2#!B@9(."5$^@(_*B;"DD^8C;/PH$J ,:A@@&%"
MG;4A9)Y@,**2)&#0&E(!>".6%*7]KH(DJTB-4=8T_A0F2=]S,?.G44)U*3RY
M4X2LB)*H`DQN8 W["A'O>^)DB01T- 028DJ,P<2*-14`HSGO/I0B-@0941@C
M>AYB%ZAK0$C=6M(B-]Z"&Y1:.M<N_-KR"M.H7)2&R>GO8G\:I>%D('AJUT0D
M<Q\I"2 (Y[D0*K6?B&QXYXJ<X,6[-_AK+1<4[=)20MQ*TI\H6 !$GO.XJ7PF
ML#PCPW @I=(`(((CG.8H-A17&5G!Z15>]<+'#KRX2M<MVSJP0<@I23/I4Q*5'
M4%'IN<53XPKE>'^,*F1[!<C'26E4'*\7:XM9M>%[JTXUQEQOB%M;&^0F^=46
MEK"(453Y0LJ(`_J')Z9=X?%R^)7Z>&<1XJ[;-W;K3"5<06''0E:DC0DK"G2(
M@Z0=C6XSQNU5QC@7"+B[0CA]SP?A?,<002'V05-@JV2-2B#/I4/"KZT1QK@O
M'G+E'L?!KBY7?><!P*<=61RT;K'F3E(/68H.<8N/&;[%@MCB]ZI/$%%%JG]+
MZ5.05 DH+DI3*5#40!(WHDK\;E10CB]RM1&"WQM*DN';0@AV%K_J)E7I4W G
MFF..^#7"XS%KP]TN*4M("#S[E0!G8Y&-\T_"+BT9X9X&;<N66PUQI;SYUB6T
MZV %*[" 3-!49XCXLNUO6[?&.(<^W5#ENYQ-33VK/E0TM84M4@B$@G;N*[?P
MK[9<LVB[J_X@^M=@X\\FYNEN0L7/+24I7,0$D&HK&]X8WXL5Q"P_1*G7.,/O
M<3=ORT5(`N%J;-NI>1*-RF<A)P:N>%G6KII#K+R5J;X,V7 VL'2M=V\HI,3G
M;>@WEGR228@QB@.51J68/8'\*$J4X@Z>9.=HI@M0F0J8WTB@XK^$MS/!F^@9
M=5$]U@?N->>N9/I7:_PB.*5Q.R;),)MY$QU6K\JXA9E0'KWH+_#+E-I<E9;U
M@C3O$5==4MATH6V21U'6JG#;4W3CA"D@-Q,]:V'V7'EET(!G) 4#04!<#JE0
M_P!FE[2T-R0?4$585;.IPIM0^51%O$E(]9% //9,><?':G#C9,!:8^-,6D$>
MZDQZ4!MT?JB@EU),C!I&"*KFW1$B1\*;V>((6L?!5!H2#&\]:('>@!B>D40,
M]* P<;;40.,"/A00#TIYSC]E`0/>J_% #P^1L'!4\@9ZU#?_`/JX@G90VH.?
M.5#M4G010+'F$?C1?Z,G$ ;$T'OUR JX>4#/VBMP>]4>)@'@G$@<S9OSC_DU
M3^VK*W!SUY$R3L>]17H2KAMX@I,*MW1M_4- [)O%\Q5XVPV2$:.0I2I&G,R!
M!VJ0@ =<>F:@L#>K8"KY-E!;:Y8M]9,:![VKKMM5DQ) 2!/IM0!J(VD$_"G*
MH'KWIR(P,G^S%"H&3B,;XH,WF+:\:6Q;;*PYPM]M4+"=*>8V2K._P&:TRK(Q
M\,UCFX=/C%A%M;O+4S8NMON1I0A*U((\W4PDF*U=B?,?C- 15F"3.V]/$]?G
M02.JL_&E*3 U?C0$X)$@Y H)EU*0A9!225P-(CIO,Y[41"3 WG>=J!2TI=0V
M&UD*2HE8]U,=Y[S0$0($$^OEI:8('?;%$2-((@D]J65$0D3TQ0(&".LT07(`
M`/\`DTT2<B<=!3!.08 .VPH`2[JN"UH6%<O7,0F)B)[^E2R20 `<]Z O$WGL
MX0YJ#?,+FCR1JB-7?K':C29)R8H%J(!$8GO1E:OE'0T)&^=]R32 )F3..] Y
M42M6\0>M1"X2;A;.LZT("E)S`!_"<&I"$E1SD;5&IY!<4R%GRIU$08R<9VF@
MFU21&U&"2DC43C;5Z5"3'>.WRHDD%&HS/2: S[A\Y@GO0K$J5YOEGM3+C1&V
M3%(J!<,'?KGM04[?C/#KGB2K)F_0Y=)*PIH!4B!G<15P"1 P2J#@]JB:XE;7
M#R[5N]:6\G5+25R1`SBI@05#&3D_2@(!*5*(Z]QO41!*"01F))3OC'[3]:E&
MD]*'`3YAGM'I01E(YBCB=B=/85$VXR;AQI*D%Y,%:>L$$B:F<$J)@'_RI(6E
M3BVY22B-2<2)!B: $H3)<"0"K!(3!,#$_7]M&E"4J44I&I4:E:1)@8DT24DC
M;S3.!Z4Z4DK/E!&-Q00JT^=0'F5 )TB2`#$_4_6A(0%E6CS&!(2),# )^=2*
M!*8TIW[>E#U)"1N)QZ4$;2FB\L)TEP$<R(U>[B?QJ1"4)45AM.M0`40D"8&)
M-,VM)YJ06R0I(< @D'3B>NQJ324@`I3L!01:$I6I26DA:].M02)5`@2>L"D-
M/,*PV I4!1@`J &)/6*D(R/QQ4<*44C2#VD4`H2G5J2@:ED24@2>F>])I39+
MFA*"=2>:4Q,Z<3_LQ^%((4I926YPD^[ZT02#S0D-DZDAT")U:1@]C$?A0"E"
M&U+6EI*5K UJ"0"J,">IB@)2E:E)2E.J-9"0">F3&:D(49$8P(@33!*H*8S'
M;UH&;"4%12V$ZO>*8$Q&3]*=*$("@VA*-:B24I U*[F-SM]*<!1;PF209QZT
M:@8$CRIF,=XH(0I!6\6PB>8KF:('F@3,=8C\*=*$`)T("4E1)T@"3'6A"D.%
M9;+2R5J"BW!\PWF.M2I0?U4S)Z>E`Z"$#2D:1.KRI DG<_$G-1<MH:T\EL(6
MHE2-"=*I&9$09S,U,4B4^0;#I4<$Q)@`_JT'.<.\,\*X/XE7?O)M#PQYG0EF
M\2A24.E:50E*I$:4+S\JM^$4J1X-X2(C[%9@`=7%G]];B5VMHMMR[>M6VRH@
M&XTI23!/WCO7/^&K[A5OX7X:R_QGAC#J&84T]=(2M)))A0)D4&V94.NY&U!=
M6YNK*YM2XIM-S;N,E00#`6@I)_&HT\1X& 1_&#@LR?\`VQOM\:(<3X$!'\8.
M"Q&?Y6B?VT'*)_@UX:$I2.+7FX']%3_O4ZOX->&D@IXK?$#<BU3C_K&NH/%.
M!) /\8N#QC:[1W^-/^EN!!1'\8^$!.<^U)H.7/\`!OPDJ@\2OSU!]G2.G::)
```

```
M/\&W" HG])<2B!'\G3/[:Z7],<!"\^(^#F.HNA2/&_#X2#_&+A,X'])!H.;_
M`/1OP6<\3XIT.&$?G6WP/P_9>'&[T6=Q</"[2A)]H;2(TDQ$'^L:G_3O`!A7
MB3A1(&(N/\(I+\0>'@/_`+Q<-@9@.$@_04%KEA2O,!I*OU:8LA"<`"-HJHGQ
M)X=4H$>(.'D]M:O]V@/B/@1)(XS:*B8@.'_P4'">.B#XA")/DMT;;25*/[#7
M(K_G('>ND\7W+%[XD>?M74NL<EI(6D* *@@3N =YZ5SJA]H#ZB@U>#8%T<=-
M_G5@$]S4'"3_`":[)DR14Y/6*!!:@,*/UH@^X!AQ>-LT!P`(H1B,4$_M+IB5
M:OCFD;DQ_-M&-Y14,S.*;\*"<W#9W91\I%,5VY/F:4!_55^=0DSO^REF@E$@
M[44DQZ5'F!&!1"8]302 Y&8GTIYQM]*$"1_A23@_*@/]M0WV>'N0-B*EF>N*
MCNS_`,'O8[4'/KG6(VHP)28[4#AA0%$GW3\*#W1"I(5JW2#@]\TKA859/ R0
MIM0,DX$15%/&N$6;EK:7G$V6+EUEM00M8@#2#*CLD?&*TU$+>5;%0YW+*U-3
MYBB8U1OIG$[4%;AB[A=BPM_V?S,M:.652!H&\X[;5<R1-8_!7N7PJS7=<3M(
M=MVU--J4&U)3!'4^;M/I6D+BW4<75NKH`'@?WT$H)&<4E)"Q/<34*5))@+2J
M>B3/XU*EM2@E*&R9&(3TVH,YA:AQOB*4)25%%L2E:]'E^T!.Q[;5?(3I!$P?
MA64%K;\1WB&V$E9L[8JUJ*<<QT3\A6L#!$)/PB* ?+ $F8]*<"=B:?J-Y^%,
MJ1$#'TF@$F"8B/C3%Q8<;2$$@ZI4#A,;?,T9U#(.")J)U3NII*&]843K5S -
M`B08ZYQ\Z"0$]Q3^8D&4S\*#3'4?6B ,C(^M`XD=OQIP/,(QG-+2#T'QI@4@
MB08H&+D7@8Y+X^RUAW0.7O&F9][K':I%)C41/^348>_E0:Y:XT:N9'EWB/CF
M?E1SO GYT#CW/V33@D 8S'0T,XSO-$E1&>W6@8@$F9DCO41>"GU,Z7?*C5JT
MG29)P%;3C:II(4?A0+<U.Z!JD)U3I.G>-]J!R,R-Z<+WF#WS2Z[_`!H@#!B*
M!EJ/<#?]E,O<G$1UI$J R9IE9G,8VGTH(6>(-NW2K9%SK=&J4PK$#/2*L *"
MAU_\J@;O4/7)MTJ?*QJG4RX$B!GS%(3^-31.G8?^5 8&9P*;4=,]>GTI)3"A
MM]?2A,!!Z"1GY4",E1'8P?I0(<"U+;#B2I&G6D;R4XGM_C3JR3/U^5"E:5..
MH3EQ)2%X[C'X4$J,!,0`!T^%/J(4`8-1I"=*1.('3TI_+(^72@'4HXP(/7X4
M,S [$&1GI3)@JG!,YQ23!@!,P1TH#;*5.. +2I:"E+B1N#ID3VP0?G3@:@$]
M,;5$WRU+> TZDJ2%P.ND$2>OE(HB=(D"/C0/G$;1^="B=0C>4_MH2$R"4[QL
M*$$`IQC&8]:"9*")QO'3L:(J"BM*5).A>E8&Z50#!]8(J)!$8&>Y'K0J<;47
M0-&I+FE82-E0D_L(H"'O$YF>WK3@$!1C:>FV?\*A)$$G]E$!!4(ZGI03)[=B
M1-(DI25=8V[XJ-1&E1&!T\M ?U?W>E ;;Z'R5MNM.)"E)*D&1.QVZS4@42!\
M/6JMNMIYI*V2DH4HQ"8R"0?Q!J9&@#,;9WH"+A(!@8_&FW&P]V(S0) T^D#K
M1)3A4QUC.]!*N_9X:V'+BX;8;7K2DN;%6D[>M4^ 7=VSX=X:TE:D(1;(@1,8
MG>E?W;%G:+7<*B6W`/LU+'N^@,4UBV6N'6*%>4BW;!!/_)B@U/;KP*S<.#U
M- >)72@?Y2X9Q&14`$#RG,;ZMJKOW=M:N0ZXK*0=+33CJAODI0DD#!R1%!?3
M?WGN^T+@`[DXH#Q"\&I/M+AQ'O&H&G6[FW#UL\EQ!)\R200=X4")!R,$`CJ*
M(ZB59Q,&#UH)A?71D>TN`",ZS0KO;D Q=.""#_.FG;:<4F4A1 &<5 EQMQ]R
MV"G2\E*%*;;86LI"U%*28! $I/PC,4%A-U<$R;EP9WYAWI*N[I12?:'508R\
M:=QEU *U(6&B<%0P2,4P9<+/.+:^6()($@4#BYN)23</`C8<P_G4*GGP!]H[
MOU<HUJF))((D2,U')4V?+N)CL:#S'QN5'QA?ZBI1TLB5&=FD5S*O>'QQ73>-
MU!7C'B4'"5H2,S,-I'[JYA1.N@UN%)/L%RLYA8$U*9S4?"R1PA_,2[M]*D,@
M1.*!I,^E*-NM.<4W>)H$=J$_`T_3:FD]:!S39 CO2V]:1SF:`B8[GL*(',=:
M`'UQ1:NG6@/48C::,'/6HTDR-B8IY/I-!(/\YJ.Y_H#YG9-.3\*3T&QN.^C]
MU!SZ_>!IQD&*9S[OIVHD1CJ/6@]*XN[PBY1PKA_$!9H2M-JY<.KTMNZ"C$*B
M2,&3/:KO$;+C-Y_"!87UB^&F46:$./Z(2$A9\BAJ^T)W@D?]6MBS',X+PW4`
M0;%C!Z_9IJY;C[=&J)"ACI^V@X3AG@?A_$N%6US?<0O7E+8')1J"4L@2`,R5
M`=A'6IFOX+[!"B7.,<P:5 )1:Z"%1Y225&0#$B!/<5M>&0H^';!Q3Q4E31TM
M\L )`61N,G:MA*@3MU_=0<<G^#FP-L$#B3_M.OS.\L!LIW@($F?75\JL7?@A
MNY6WIXQ>AIBV#3(=6%%"@N<:4@:=)5B)D[UU,E/0Q\:8.S,=#F:#'X=X>3P*
MZN7K-]QU#S2$!-T=:P0LR24I$B#@16LYS?*6@D^<:M71/4XZT3Y=4RKD*:#O
M3FDQ^%.1F<10"X5 IY<'S"9QY9R?C%"I;A6V$I!25>8E4:1WB,U(8U#.W>A(
M'?)H&4M0Y8 24DPLD^Z()GUS`^=,M:T%H-MZTJ60M16$Z!&\=<XBB&V"<C&/
M6@>+@+6A*52N%ZC$)@YVR9C'QH"U*YR$\L*2J=2M4:8&,=9I+6M%TRVAC6TO
M5K=U@<N!(QN9VQM2"I5$'YT:3]!/[* %..!YM(8);(.MS6/*1L(W,YV[4Y<5
M[0AL,*+:DE2G0K"3(Q&_<_*CDD@=:8R1'[Z 25^TAL-*""C479$3,:>\]:(E
M8<"0VK24DZXP#($=Y,D_*G2XM+^DMJT%,Z]0B>V\S\J?.8[4`:E%9;*%93.J
M,3.U&#]HI "H" 2J,95$?&E.#1 "<[QC% &L>T%&E<<O7JCR^]$3WH"X"Z6?
M/(1JU:?+$D1/?&U2D@DB?PJ$D\WEE"] 3JUD#29.PS,T!!Q"GU(&K4D!1\IC
M,]=NE.VZA3C[22K6V I4H@9'0[';Y4ZL#J3FD/-/IO0$I:=2V@3K0D*,C$*F
M,_[)QTJ,NM^T*9$E:$!1P0(,QGY5(H^G4T*B2H@Y,?NH(&.*VUQ=JM&GW5.I
MU2E32PG SYB-/XU*BY9<N7;9)EUE*"XG21I"@2,Q!V-0,7R7KM=L$7 4G5)4
MTH(P.Y$5;!C2,';]E *+EIRX>8;)4\SIY@@B-0D9B#CUI<QM:UM)5]HV$J6F
M#LH&/3H:D2LCX#U]*C6HE(!Z'OZ4$8=0MYQI*I<1I"Q!QJ$C-$V^VIUYI*R5
MM%&L9P2G4/PI:R=/Q'7TI-OA2W$9);TI5,Q)3._7':@%JX86^\PA04\QHYB<
M^74)3]1VI-W3#]TZPVH%=N4AU,$:2I,C)&<'I-3:X2-XC F@4X=2=S@=?C00
MMMOM./N-(5*VM(< !\I()&],R\VZMU#1"ELN)0XD3@D3'T(^M2)4HZ1Z#K22M
M0 !)G &>N:!-O)6MU"2"6R$K&1I5I! ^BA]:C%RT\_<,H4"Y;%*'$@$%).1/
MK!FI4O!:G4I426EZ%@@B# /7T(IEK5)'>",^M! FX;>4XAM04MI00X "=*NW
MT(VI,OLO\Q#:]1:66W(!&E4@QZ[C.U$2J2=S&?K_`(4?FCX2-Y&]`-N\S<\_
MDJ"PRXIE9@B%")&?C3!Y%P7"A6HM.E"P)$*@$CUW%2%1),[&>OI40N ^7-*R
MI3:U(43(\P^.XH ;=;N&UEI06$.+;41."-]ZG0IMXJY1U)#JD%0G"DG21GU!
M^E,EQ403F3U]*(+,0J2G?)ZT$+5RU=H6IE07H<+2HD0I.",^M-;OMW22ZPK6
MDJ*01.X,'<=Q4G-*BF=B>_2B;*E.I2!DQN?6@CM7V+ZU:?MG.8RX`$N$*W"B
MD[YW!H+:ZM[VU1<VZ]3"_,E>E0D`P<$`].U':7:+FT;N6M1;6"1J24GWHV(!
M%%S"9._49[4$;=S;O6IN4+*F.67 J#[HSM$]#4S;S2[5%R@DL+1K22"/*1,Q
M$[4VI1),9SF:?G'220=1$#-!F\8XO:6O!;@JN%I-S:N<DAM9U HQ,#&_6M=(
M+3;"9 TL-#>)\@K \3WO)\/<00$/RY;K`6A)*1(C)&V];]V"V\0"8@#O'2@!
M>E*5*D>7WH-5^'+4GQ'Q=;:RE:.'VS?E5!,NNU)K()DJ) VQTJ&[X<Q>.#6I
MYM8)!5;NJ:*^P44$%4=)F)-!6X@I%S>6G"K5WV5B_<NG+EZR6&GN:V&SA8G)
M*H,@S0^'N(77$/$/#D./*4VKA[KJTI4=)";M+:5*$Y5I3D[Y-6%\-ME6R+0-
MJ2A*A"FBI+D]5%:2%2>IF3UFJ?%KW@5HVW9\5NFK=6G6WI4XVL)E0P4$&"9D
M3OO08O %7W%;;AOM?$N*:6^"JN#RKQ:>8OVQT!2H)GR@#/1([5=M+Y^[XO8N
```

```
MJ?T/W-WP-#RF?(!S2ZM20!TS5-%YX33Q%IX\4L_9K:S0Q;(0M])04N.+)( $
M^\.I'>M*VXUX4XAQ-M-K?6SMV]<6[J/LW@2ZT"ELB0`"`H_6@N!7*O6.(BXN
MUKNN,/V[B'7U+:0USG\(03"8#20,8FJ=F7T\2\(7SEQ=E7%+:Y?N6R\KDG2P
M2 E$Z0!(VK;1;,A+1#*0IE:GFU2?(LE1*AF)E:OK5!C@+:>/N<5>M[%AQEQY
M5LJPUA3X<"DJ+^O[T01H($E6^*#1PM8(&9CW3UH2G:$@F,@IJ4*2%= 3&9-"
MXL%8$@C.0>M!Y7XL<#GB?B:P!'/('RQ^ZL QKDF(K6XRL/<6OG>]PX?^L:R5
M>\3\:#6L/_51$^\LGXT=-:^7A;?JLFE$4"VZFE,9%,! WI\?*@1R)S3 QCOZ
M4NM(B=Z!4,:3O3G!&U+K0)/:C'Q^51@F,31C'H* Y],TZ1Z4(,&GD'_&@<J,
M3OTHW #:7/\`S9._I485JW%&?-:7(_Y,_L-!SZHT)@42,#YTC[B2*)M/6.M!
M[7PQ<\"X00-[%D9)Z(%7V%#GM_V@9C:LW@I4OPYPE7F %F@$F,[BKP5I4(/K
M09GAM$<`LU%U9 2X.4I*=*3S%;$#5TZDUIJ$DQ&!/SQ6;P)E3?"FEE]:TE;Z
M$M8TIAU61BM(F9B)H"4#.PD^E1D$D@$_6I"=1[2=XH8DB@!:5EE:6U!+D'25
M9 /PFB6J5$R0)VFDZTMQAQ+:RVZI)"%:`K23UCK3N*!).9W.:!DF2<]^OI3$
MXD3@T@KL,"31;"=S.U .!!@=/VT#I=^Q+/+/G'-UDX1_5CKM1_MIG"YJ;Y91
M&L%>HGW>L>M ^F%2$B.N*?(F/E3GJ8QVI@)'2@<!49WFD<F#,31J3L,Q/:A(
MCXT$>M7/""DZ-!)7J&_:-^]2$"@`4IV-*=&DRK7!G$"(V]9Z4> )&U )(Z$Q
MB)HI$@T)&4X[46-O2@4Q)B1\*!3LW/)#"P.7KYA T&51I&9G$_/>C E/0">O
MQJ/4L/E'+.CEZ@N1!,QI_?0%J))^=%'O;=:$DZCC&:+22"01!)H',[1WR=J!
MPG48`P.O>*-0^9F@(,K,_P"8H*;%X7N(FV]BOD%(5]JNVTMX'176KX)(3YNT
M_2J-O=*<O%,FQO&PG4>>XV V8'0S/X5<'>?\Q0&!)@GTWJ-0.D$=_P!U& )!
M/:HS[H^/[J!A)(B21%.A6HN0%?9E`,C"I3,@]>E!(ZS!@&*)*]2G$Z5A2%)3
MJ(PJ4@R#U&8^(- 4#20>PS00-2>\"C/NG?-1X!Z[#'UH&2#*1WT_MH@(`]#W
M]:!,!0ZY'[:D&1(&1/[:!:IYB05#E+T;$28!QW$&HUR5'N3'RFG"PHK&AQ(;
M<* 5)@*P#*3U&8GN#3')]9_?0- ((S,&)^-2%)U&%& 3UWH-`U*(.0DXHCI
M)]>]`"M0ZQO()VVJ-MSFZRD*$+6@RDIR-X';UJ183)]:"W7S\Z'6H6H$.ITD
MQ(F#T.]!*$@D`&,#)/I0*U2,';::D2@:09[=*%0$B)R/SH(TZBH3D=!-&E"B
M(&21CTID#(,YP<?&C"1)@21/2@A8?-S:M.Z'6PX)"7D:%@3U!VIR%Z3$[&@9
M=Y]NASE/,ZTSRW4A*TGL0.M3"20#C_RH#"-\=2: @DCRCYC;%$"$QD3MM0`J
M.<;R3&]!@^+[SD>';ZV-M=*YUN(>;9EI$N)$*5.#]>E=1?*U73Y3!)6=76N9
M\7NN?Q?N[;V9U:74-?; #0W]L@0<S/P'45T%TLFY<F))5GOF@=.G)B,D;;B*
M0A(.`0=\9J,*,P(D=C2*S, DCU4:`@H&#$8'0XKG?$-_?<$XEQ'B7#GU6]TS
MP-@(<2D'W[S.""-B:Z%)D"0)@R =A7'^,^,<.L..7%I?V;UU;W'#K9"@T^&B
M-+BE[E*NI'TH%8J=X\TSXAXHXE_BS/">(7;=Q&DI7;D<I6E,)E)DC&>LUE<.
M\4<7\2>*.#?IJX]J4P_S&G5@)4@:5$I3IA,&`3(G`SO-%GQ:FRO0FSMRCA1M
M'+%RV6\%+4RZK6X`YIP2J8,8FM'PU><,XAXGL+?A?#?8K=E#KJ@X^'UJ4&U@
M>?2D@>;;(F@]"02DG 'W0$D[42U2J " %"/--$$A.(.J9FGTRG;.^1- !"DP
M25$=@=J%*2;AL*"B"H3D=:D($F 2>T4+9'M#9)(.M)PGUH/&;A:G%O*4<J<4
M?Q-45B9^!JZJ5-"=S),U34/>^%!J6)<>LG$SAD B!U- 7G$C+?TJ[;-(8MD:
M7"D/(!6"G$_'YTA:@[/-$>JHH*7M(!RA8QVIP^@@28@U:-JL[ *$3@S49MUC
M="A\0:",/-D&%IGXTX()D&?A3*82=T[U$;9N=L4$TGYTRM@1$U"62GW5*'3>
MG2AT& YCX4$HVVH@?6HTG&*(&@DU1T.?6GQWH!UZT1!.-C0'.1T'J*D00;=\
M1DMF!4(,B=ZF1/+=]4&@P3_-BG3M302GYT20?2@]C\/.<SPSPP@'RVX3T_65
M6GJ'O29^%<UX>O7QP7A-G:AKG*9<6''IY>E*@(A.9\P^$&MEYZYMT6#;C:5+
MN;SV92T`A)!05A20<_=C/4'TH'X-;J%LI2"\I1N'V]/,)2!K_5V%6M!=`6T)
M;DI)@C*20>G<&LPI2UQ6\MRUQ <I#;X%JI9*RXI8,(! $:)FI+2W%UPUJY2_
M?L!;SR.7SU C2ZI.>Q,2?4T%YJ'VD.-*"D+$I(D2/A%,E2'+8/I4"VIO6%?U
M8F?I62_;W%L;>UX8CB-V\1_-)OPPA*9CWB@IF3M(J5UOA['!T7@XKQ)-@IA!
M;(<PI"H2@:=,B=21Z3F@NN.H]B=<#O+3RBOFQ[J=,ZH/;>I'BE#;CBU!*4#4
MI1,",?*L34!9/6]\N_L[D)2R; W27M7,E#:0M*-'F((R8'6!0OWK9;;M+MV^
M;NG[IBQN+)3B%%GG!905*"8(*43 []*#:4ZE#1<40E(ZDXS@9]<5*ZM+*%+<
M4E"4JRI2@ ),1/QQ6:NV6X\+(WMRK4SSP"A!2 E8$;3@Q4UQ9/WC+C3UZX4*
M(41RDY(((_&@M*^SRM80)B5&,G8?6HWRM/)*%H:EU 5K^\,RD9&34=U;OW 2
M'+M.%A>+=(R#(ZT#]G<709#EVU++Z'TQ; 2I)D3YMJ"XHA.2I(U$`20)/84P
M($ [$]ZK/6EQ=+MRY<6TL/)=1_)OO 0)\_J>V]5'[NW>XDQ;'B+(NF'-2 GA
MKNC44G!7J*8@]Z#65I!3/WCCUIE$1,9,QBJ;33O$+YEYF\LW5V+[K2D"V< U
ME(E)E68"DG%07UVAACA=^_Q&S;9>.NV4+9X\W6V8D D[&<Q%!H!:PX$Z!RR#
M*IS/014WW0`(QVJFNVO/:VG5.V@6VE: D(6 =0&=SVJ(7;B^,ILO:;+VYEE9
M-L.9)2K2=1Q&($9^]0:1Z$@_&*C'4[UG<1=N+13/$+E^T8982IHZW%)2HK(T
MSC?RFH;J[N+(-\0NG;-BWY>@%3Y2E6HZ@=MZ#8!,;_.?6HBMYRZY?*(:2WJY
MI6,JU>[&^V9K."[_`/2[:]+!4;0I%N+H@$<P'F1I^6U&K])GBJWT,-J;0R+=
M3 NY2E>H+U>[[T&-MHH-)6HZI[&,TYV41MGK69S>*&Z+YL4Z"V$AKVL1.J=7
MN]C%,'N*HN7W?8$+;6VE"&O;!"""23M&9 VH-54$[XG>A/6#T.:H&YXF+AQW
M]&)+:FFT);]N3"2"LD[==0^@J+G<7]O=?_1I+2F4H0Q[:B$J!,JF.L@?*@L,
M/NJO%-*L7FVDE7VQ4@I,#L#/X5;!P(S\O2LI+_%473SRN&+4TL)"6?;6X01.
MH_$R*)IWB[5W</*X8M;+@:Y;/MK?V12D@_WM]J#3,!<8';I0DCZ&LY@<:%]=
M/+X4XXRZ&PRT;MJ&M*2%=>IS1(7QD/OK/"'%MKT!#?M;7D(!G,YG]U!="A"1
M\)IVU:E.`I4-*@!(WP#(^L50ME<52[<*5PIYQ+CB"VGVEO[-(3D;]P31-N\3
M;7<\SA3Q"G$J;!?;E"= $3/50)^8H+Q(`.=MZ">O<"LY#_%475XI?"[A;+JT
M%E'/;'* 2 KKF3FDT[Q1+UPIWA;JTJ6%-H#S?D3I&#GN":#2$3,=,'YT0(!'
M8$S65;/<40I\O<,>6E;JE-_;-C0B``-^X52M7^*LHNO:>&//%5PM;4.MC0@A
M.E&3F,T&DI94MSRK&EPI\PB=LCTS3 S/I(JD+CB0=N%.<*>6%/*6@<YORHA,
M)B>\_6A8?XFA+H=X2^X5.N+3]LUA!V3OT[T&@%>]N,GZ8IRL:3@^GQJBT]Q)
M*%)=X.^N7G% A]H0DJE*=^Q J"W>XLVAX/\`#'G5+?<6B'VQH;)E*=^@Q0:(
M4-63`V)B>E"RYS$:U,K;,X"P)W([U1MG.*,I//X4\ZH.+5/M#8\I42!OV(H>
M'N\4M[-INZX6Z^XF5*<%PV/+J)'7H"!\J#5"D^FPQ44>4'K SVK-X>OC%K9,
M,W7"W+A]`.MXW38UDJ)'7M ^5-;N\7;M4M.\*==>`(4Z;MH9S!B9Q,?*@U01
MO&,]/6GZ*!29B8FLZRN>)L6;+3O!UOO--!*W3?-@J5U,9^-,ESC;=DVPKA8=
MN.0&B]^DVB2H)@K(&QG/I07FRI:$:F]"E)R@D$@QG.WTJ1"9C5$DCS=JR%N\
M878N,M\/'-]G4CVL<2;.E6@@K^1SO4UX_P`77:/LIX4+=QULM(='$6Y2N,$"
```

```
M-\$XH-""I8R!M][%)$F#&(]:RGW>+KM5L)L`VLH2`^+].H$09]V<_A-'Q <7
MO+)ZV8L4VRUF0\B^3*(5J.=(Z B@B\1J?-BJU%JHVSRV-5P'D@(47D>71[W0
M9VS6ZN"Z3N"HDY[U@75_=<90XU:VMDXE+C;A#7$$+ TJ"@,)Q)2!4EQQ:_M+
M=#MUPZQMVU+#8=>XH G403'\UO@T&X!H3@QCH:B&\F1C>>O:J*WN-C5JX;9(
MC)U7JS _Z&H&;[B5S8+OF4<*79HU%3PO'%)A(E60ST%!M$%*B ().3\:K/65
MC<NA=SPZRN7<#7<VK;BHS@%0.*S;7B=W?,-7;#O!3;O.AEMWFOD*7V'V8S4Z
M%\0-X+15SP9%UR?:.24/J/+U:=6 ![V-Z"P>$<*"/_4?# ?_`,@S_NTF+*QM
M7 MFQLF5B4ZVK9"%1\0)VI_9^*DS[5P5)W@V]P8_ZXI(8XI&I=_P?)D@6;^/
M^U%!8*I $IB>HZ4D*U#&@B-S0H9OAJ)XGPB(U#_@]XG'_OZ(>WI2!^D.%*'_
M`/37#^VXH!TC7YBD">Y%#K+4N8 1YM^U$ISB28_EO#(G`'"U_ON*JWC_`!$6
M[\W]@$AE:C'"HD!).Y?,?&@\F<D('PQ5,R9[S5U_;&!TJD"2J,;@"@W78#%N
M)]UL#\*BF*E>$!"9D:14$F:!PLX@T?M#J=G5"/7>HH@32W'[XH)O:7#DJ!'8
M@&ESDZ?,TA1[Q%0^F":;/2@L*=MRG-N1\%4*0P5 ZE)SU$U7,]Z0R1WH!!G-
M$"9GI40(.?I1B.YQ02 FG!)Q03BG&TC'QH) >M2M#5K ZIJ $$@]:L6I\QG:
M*#$6(U[^\?VT[>1%,X %N=M1_;20-J#T;PPH,\(X?>/Z@PP;AI2D(4LC5H(\
MJ05';H*UN*.V_$[7@Y3;*<M5<79"DO-D!:-"P24F% `R,@56\#*U>%4G(";I
MP)^B:Z,*,>\<[B:#/M+6SL./7"+.W:MTNVK:E(:1"9"U?C!JUPU>JP> .4\1
MO<'_`)]9_>:E*3)DJ,[YH@2"F5' C>@RN*\69X<IBW5>LVCEQ*@^\K2E`3&1
M@RK(@5G\:?MKSPZK@O"#SW$V;-Q;I:$A3*;A`W](}^ KJ&WEM?S2H'7&#0ZB
MHC"?*$I'E&TT'/<5(O>)W5S:1<6H=LEEUDZT!2+@J4)'4(4D_.G39+O[_P`4
M*MFFGG7VK4V#R5 @7"67$I4A<P%)44Y!Q-="I((G2@#J$I 'S H6P&D@-I0@
M)42$MI `QT&U!E<,3<NOW5W<GFI/+8MW%*U$<M(0\!U +J5GUWK4`A,=A^^F
M2G0`E("4R3 @#S&2?C))IADSU@?MH"..Y^=""-0@[;T\0/G0DZ1CXT$UK'M+
M&K(*TR/G63PX(1X>"G@DVR'+DKUB40+AS><1BM-*H4#\#D51=X-P]SB0XBNW
MFX*DJ*N:X!J $2D*TG;J*"KP7])GB_%C8WEHRA7$3 >MN89+34F0H0(C;UJ7
MASR;?@7 EV]LV]?O\(:;;2F$K4@(^\KH@&<'!, 9JZPVBWN'7FT@+><YKA$G
M4J )SM[HVBJCO [!T6JN6\A5M:)LVE-7#C9#222$DI5G)-!+86GZ/X99V86%
M\AE+84D0%0`)CY57NF$7+EMPZS#;/LE\S>O:!" `K41C=2O-MU%76&@PPTTW
MJTH3I&I94?F2235=GAS5N\E:;UVV.<7RVFX(1K)U'R]B:"2\)_CCX<(`A;=X
M".ACEG/U-97 _/QCAZ%;3?@@Y!(ND@&/A(^=;"K-E2$!*G&5MN.NMO-*`<;4
MZLK6$F#@DQ\*A5P]D-MBW6[:N-!00\P4I<&HRK*@1D@$XH*?![5KF>';HO++
MERD\-=*S(""MUTJ[ZAR@.U3\!OE<4X.CBCC8:=X@ZI]QH##:D@,P.L0T#GO4
MUQP^W?X2[PR7&K9U'+/+,*B9D&-YJZ\LK7J,0! `Z 8H!7A<?'ZS33.!\:1A
M,P-NH^- 5PDD1.<&@F)@_&@5A1SM3F2>FU,5:21W!CZ4&!PUQ?#KOB=PLK<9
MN;RZTMZH2A2%'2@=)<*H^6:7AZV=M..>($/7#K[JQ9NE3Q)4G6VXK3GH)CY5
MI)X=;%LM.!;J%71N_.8TK*M8VC (%2,6J&>(W]X%J4Y><D*!&$AM"DB/CJH*
M_%K%R_XEPI:>&VW$&K9-PA;-P41J<" DC4",%)^%4VO8[KBO#K9-G;>PZ+KF
M6?(2&N8A;:3Y(TDA15F*U;ECG.LO-W#EM<LZN6Z@!6F8GRGRF8&X,=*K(X<T
M@M+MWG+:X:YA2^E(6HEQ6I9*5>7*@#MCI%!1X,E/$.(\,MN((1>6ZK)]P-/I
M#C94+L(22E4C"20.P-+@-_='^#E/$ENJ?N6;&X?YCZBHJ*7'-,]3[H&]74</
M1;\ERS=5:W+""TAT#F>13FLB"8RJ#/2.U"CAR6;-O@]L$L<'#*FW1J*G'$J6
MHJ;SL#JG4#(H+G&+KV#B+S0:+C35@[=<M"96I2'D( 'R4K'H*J<+NW[ZP3=.
MO6SZ'#+:F&U(A(C"@HDS]*F2S<*==N+B]4[>EHM-7')2GEI*DJ(TC!RD'-*R
MLFK%IU+<%3JBXXH)TA2R`"=(P, 8'J:"<$Y'43^VBU@3/6:2L?.9^M 51,["
M<30-KG'H:<',&,DQ_=H!F?G1(R <S/[J"1)P2)B:`+(,1L>_I3R8$[=JCF2F
M1N10&"3'RW^-*<*(`VZC_/>D@8G$@B/K39TCUWH!425>D @SZTAE,?$4RI,]
MP#1ZLD8B2-_2@,+".:ZHJ@-.''3RDS61PCAUNJQX8Z+1INY+##CC[+:4..+T
M)4K4L#49.\G-:2U<QM25("M:2A0.)!201CTJNQ:I8-JLW5T\FU6E;3#K;:4(
M*<)\R$A2H&,DSUDT& P_Q%?@KB"F+&V7:N6UXKFK?(7H+CLD)"(D9QJZ5M^)
MK-@>)+&[*WBY^DD`H+JBV &G,A!,`^4;#J>]%:\-M;3PZK@:'GC;+MW&"XJ.
M9I6M2CF(W54]VVU>735RZI6MAU3R4I^\2E2<X[*H#*9D'WH,XVJOQ*Y+/(L;
M=>BYO%*Y*UCR:6])=U=1*5$"!N>E6@!Y@EPI69 6G=)/48CZBH&&2P_</F[N
M;AVX#:'%/J0<(U:0`A"0/?-!(W;LV^EIAM+;2-* E(V $#/7'7XTG%VMC<VU
MW<-ZKEP>S6Z-R]G5H@F.AR8'3K%$DD*F=X) /055>L.9Q)-^S?7UF^+;V75:
MN(3J;U%<'4DYD_@*"BYPU[AOA*RX>\XEU\/V[*EI)()-RDF"0#M^^K;KR?XR
M>*-:0$)XCP5M*0) !<U1\(D?A4@X:R\MY3W.=<=0VVMQU8)&C44J!C<%1,_"
MB39,EIUM7-6X\I*G+A:QSE*3[BBO?4GH>D"@S.*7;K3G'.(H2X]<V+]H_;B-
M25.):$!0W(^U.T'UJ[9(]IXKQ+BKK:@ZRZ]PRVC"5VR5I<2N",DDG(,0=JNV
M+'L2$EA2N9)4MQQ6I2S@9)R3@#X"G:90S:6]HB S;LI9;Q)TI$"@,*!C!WR9
MC]U-J ``D' !Q^^G2D!,$2" 2=,4YT',".F,T#:BI03F<YBB45%4@DYC:*&4
ME(!C!D&*8+P(/8_.@1&)&\F9'2JW$#'#+Y0.$VSIV_J$59)/ZL$C>:H<2QPG
MB"U$Z?9E@CXXH/+7P(.<53;2%.H`)]\3-7+D8,FJS"3[6R/ZXH->XGF_`5%T
MJ6Y)#I'6*@(C,T#XD[TT^E(YVVII,=_E0(_^=+H::?3XTTQ0/'8YI=1&U":=
M.5 T$(,':BG.]1I[3-2#]N] 8-%.,FH^M&,]: YQ4UL2'(SD$35<':I6%0XG
M)WH,IW#K_<+._P`:9 )&!\*)T@W%P)GSG]M)!P!V%!Z=X$QX8<!(D7:B,[2E
M-=*%28Q^-<KX!6#X=NT:L^U@C/\`4%=.(U9-!+(D@?6DH;G]]1A:9Q@4<@F<
M9H"TA(/YTR!D*G$BD%9(S3@*!!,Q0)>$D2,C?YT(5YB1!B<"BW$=*98(2<Y,
M;4!)'FDD`3D4.C((F >U*"52,Y.*8@0(B@(GRD@$CX5&H B.TBG$8R.G2G61
MI]3M0""8D#K%(P3TW!-#J@[]\4X(S- *4Z 1B)V%$#B.H_.F*@#).QI@9(D]
M=S\:`O0FFD$YI&,#I%"5`*)/K02 Y]:;IW(.?6A6H)3)G<3Z?YFGF ?CTH'V
M`(]-J>8@F<IF*CF .E$%$J@SB@8G!&]-,I(]#3*/O;T)5"3O,4$NHZJ9>0>P
M!IB3)(IE1*I,"* 4G)/^=J('S)QL/W5'/F/>:)*L#O/[J U*(5BHADCK1$^?
MH*B&P[B*`T=!WBBB03.U1H,1\LT>J(B@)1P3W(_;0_=))F)IB8*A/7]](&)S
MT- :]U">IH%D@J]!&*2CO\:!9.I6?\Q0)/OC?<]/2C2"8$]!T]*C1!/K-20/
M+W@4#*,:"-SO^-"GH?@?QIU:0I/;'[Z9((2C/03]: @3`,XB?QH5$@".E%$)
M/I-1GW<','- X&1UF?SH@KITH K,=23'THM121!Q`Q0"52N3&2(I`2)S(C]M
M"#D'X&I-1(H'6=*<8FF"9@^I$4"U23(/6G22`<D"9&?2@D @@29/PB@DR@=E
M#-.5`$9R10HDB#M&/K02I@CZSZTY3.(,9@4"U"($'>13`3MN#WZ4$P$I`GWH
M,_*@)ZY[XIB#I 21.)S22 -P"((F:"3(21B4S!(J/5DY3)B*2E!.)F=S3H[S
```

```
M.!0.%!2#YH)P8-(8ZF)Z4RCD8R9G:F"AG<3ZT#DB(U=>AITI!!D_#TH=6I1(
MQ\J8]Q'TH"(A)FLWC*RG@UY$Y;@?,BKQ.9('I65X@5'"'=)W4D;[YG]U!YY<
MIW,Y.\56MT_RUB#!U35R[P"(%5;/S<0:!. :"^_EY6>M1]\U(Z-3ACO48]=J
M!'RXH>N]/D]<TQ^$_.@1$Q^--2'N=HIIZT"CO21E>]*9ZTD05GN*"L"*,'UJ
M-)D40H)13C)H`9_Q%.-_2@E!@2=Z=!@R#,4`,9/444P*#/4H<][:9HT1@P*A
M40+IT*,">HIQ!4 '$CX@_E0;W"_$MYP>V6Q9AA*%KUJUMA1G;K6FCQ_Q=!$,
MV)'8V_\`C7(%&">8CZT@DS&M)/\`:H.V3_")Q9,J5:\./_NE?[U&/X1N(JG5
M8<./_NU_[]<1RW#L4G_;%/R'H$:?AK3^=!VZ?X0KX@C]'V/T7_O48\?/@&>'
MVFK<PI<_M-<0FWN3LB8W@BB#5R#AA9/HF@[A'\(#^9X<S'H\H?NJ8>/P?>X:
MDXC%S'_@K@4A\$@MK![%)IM3J<E"_H:#OQX^;3@<*60)VN]_^SHT^/653JX0
MX!_^;!_\%>>\Y0492H?$'%.'^LS0>@#QVP,_HEZ1M_*1_NT?\=[8D:K!X8S#
MR3^ZO/?:,SBG]IP?7M0>ACQE8J)_DMPD_P!M)WHT>+K!1 4U<)'7RI/[Z\\-
MQVWIQ<_6@]&_C3PU1R;@$G_5@]/C4B?$O"])/.>S&[7;YUYN+F,=Z(7.-C0>
MD#Q%PDD`W+OPY)_.G/B#A"M7\K<S.[*J\X%SWW[4:;K!WH/1U>(.$Z2?:U2=
M_L5_E3CC_"=/]+/?^:6/W5YR+J#O4ANAI'^9H/0!Q_A15 ODSZMK'[J,<=X8
MDG^7(CORU_E7GOM0.9B,;4O:1JC5D4'H2N-<+\TWS8'<I5^5`.-<-4G^FM=.
MBN_PK@1<`"9/UI"Y2<:J#T <9X:58OF9/Q'[J2^+\/*C_+6=B-S7GWM0$YP.
M]$F\!.\T'>CB=F5'^5-X/0FB_2%I@BZ:/I/I7!^TCO1^U#>:#N?TC:E8FX1C
MUH4W]JH`BY;&WWA7$^T@@9IO:!,`[T'<"]MIQ<-8_K^M2&]MI ]H:$_UQ7 F
MY&<T)N<;T'?&]M]9FX:R?UQWIS>6P!_E#1F1[XK@1<I[SZQ1&X2>OSH.[7?6
MHWNF0 3_`*04"[VWU?TEG.TN"N#-RD')B<TXN*#O47EKJQ<M8_KCX4_Z0M D
M'VIKI'G$_M]*X3VA,;XH#<B1D4'=F_M-_:F1@ 2L4WZ2LQ -TS@$>^.]<(7Q
M\:;VA)P#F@[P\5L_,/:FP?551#BEB-4WK..FK:N&4^(WG.U"7TA/O9'>@[K]
M+6 4?Y:R3\?2G_2]AB+UG'J?RK@3<3UI>TB"/W4'>CBW#TZ0;UH$@3@_E3'C
MG#02DWK4`_JJ/[JX(W!G?X4*K@;&@[P\;X5K`5?MC5/^C7G_`*M&./\`"=/]
M-3,``<M>3&VU>>&XD])IQ<:NL 4'H)X_P@IU>W@>G+<_*B'B#@R8_EQ*?^97
MW^%>>&X$[_2G]HS,F@]!_C!P?5I5>+)./YA>,?"E_&/A"3B[<V_U*J\^-P"-
MS-+VC4/04'H#OB3A)!*;E^".C)S^-"?$_# F>9<*,[!D1O\`&O/R^#N:?GCN
M:#NU^)^'&/Z1DS'+`_\`%0'Q79%(2&KA7? _.N'Y\'?:D7Y,R!-!VA\5VP5"
M;1[O[P%)7BNW5(%@]'<N"N*%P/UOJ:?V@'8]>]!V@\6M1Y>&N_\`3C\J;^-C
M9$"P7/J^/]VN--SVGZ4:;@;D?6@Z[^-""/Z"K_I__P!M4N(\:]NM.06-"2H*
MU<R=OE7/A\J'7.U"MXB 01017:L'!/K-4[0Z;U/H/W5*^X5F#N<"H;;4+U25
M#(H-!1DDBF-.<;T),?&@::8_/Y46WSIB:!HD&FF!T-*<TT_&@8Y&*)&">AH"
M=J)&Y-!4&"*,;DU&*),4$GP-$9,#O48F:LM,K<(Z#UH!`R!'TJVQ;%2O-( J
M5IA#9$B3.]6DD$R(-!%[!;+(*FY/>G_15H3/*DU821-&".@S05_T39G=O_K&
MB'";08#<?[1JP(F>M2?>F@IG@]L3,*'?S4OT):$Y"A\%?X5=F,40,$=J#//
M+,_><^H_*@5X>M ,+=)C:1^5:<R?SIYSZ4&6/#MI_K'OJ/RH3X=8C#RP?A^5
M:\R:0-!C*\/I!E%RY/2>E!^@GDQ%V?G-;T](II@S08@X+=I&+P1TRJD>$7P$
M>UC?$DQ^RMHF<1123MM081X5Q"?Z0V3/7_RIE<*OP0D/,DG?RB/^[6].?C3@
M@?*@Y_\`15^,%=N?]E/^[3'A=_F0S\DI_*MY9\P'X]J*9/I0<V>%WH4!I1.P
M@"A5PZ^&.4-^PS73#&8I$[4',FPOL_R<'T@_G3)L;T1-JG^Z?SKI\D=J73I0
M<S[->QFS3/\`95^="&;SK9)'^RO\ZZDXI@`#M-!S*DW>(LPK?9"_SH"W>'_V
M*!Z)5/[:ZF0.@I@`?G0<MRKPF/9(_P!E7[Z:+H#-H?6 JNK@2/0=*<Q\Z#E!
M[6,>Q*_NJIIN1_[(=_7\JZN1$Q3*R!&,]:#E==Q.;57X_E2YER,>S&/6?RKJ
MY!QGZTTY[T')A;Q]ZV7/H3^5(+=.?9U3ZG_"NM!"3U^5*>G3XT')AQS$VY_O
M'\J7,7N&%1TS_A75S,8R.LTL>OUH.3YBL?8*G^T?RHBZH'^CJ$[9_P`*ZF0-
MABF5&#'3%!RW.5 _DZO[W^%,7UG/(CYFNKU=:80!'2@Y7GN''(_'_"D7W"2.
M1^)KJ@<_"D#N:#E%.NS_`#'XFAYKFWL^#ZFNM*IQ3",',@S0<IS'2#_)Q/Q-
M-K>S_)@3_M5UH('>?C3$ZM\T'*$OG_V5/T5^=-+QQ[,G^ZK\ZZTG'PH3^/QH
M.3*+@Y%LGY!7YTY0_/\`1A_=5^==9@],4^HGK0<CRKDR1;P/[*OSI<FYD?8*
M[X0:ZP1)ISU/6=Z#DTV]XKRBW5M/N&E[/>?\66/_``9KJR9-(0-A(H.6%IQ$
M@_R=8^+7^%.+;B6DCDJ]!RA^5=3J]!3;$G$^E!S'L_% /YM7_1)_*C+'% !A
M0!_J@5TLBD2=Z#FQ9\348)5!'>B]@XHH>\<]U5T!)Q)I:HZT'/'A=^-U'X:J
M$\&OR!*T]XU?X5T15^%*9,@T'/#@5V8/,;$CJH_E0'P_=& 7&B!W4?RKI2:4
M^M!RY\/W2B1S6Q'><_A4K/!W[8E2B%?V1TKHJ6.IWH.?4F%09FF(@^M;-Q:H
M>R<'N#68];K;5!!(^%!7((.=Z8G>B)!F@49P*!B<4VWSI$YBFVV%`C@;431W
MJ,DT28B?I04P:F;;4L^5,_*I&;4F"O%74)2W$4 ,VJ0F5"3VJVE&,4(..]$!
MC8T$@$4:/*D8J,03OFCGH=Q02?"9H@8CK4848QO1B8B,T$G4?MHP8^-1)4#\
MJ,*\T4!S\:(*[[4&H40,T!3IZ8]*<F=C0A0]*=$=: B?+^ZGD@#]M 3)$]Z<
MF0>]`1)P,FGR:&=H-.3&YH"GL*;53!1.*<&@>EWQ3# I4".=Q-+832&3ZTX^
M- @01(CZTIC,4*4Y)D_"<4^^QH"GYTP/I3*$H,_A3)$"-OC0%.*6-]Z80?A2
M$#% YSL<?"EUCI0S)(C%/0//I2!FF&:0A)D4#YD;T@333FD!`H'ZTJ'5"C@[
MTIP30.::3/I2U=MZ1&9H$#U-/@_"F@1FF/I0(G.!BD3)':G'N@TQ]*!_CM2)
MCI31ZTB8&<10-L8G>D% F*0$FD<*`B@4G.*7K%,%@".M.<T#S,TC@&F&!2Z9
MH%^^F BD3U'2GG,30*<[8I20.U-L9I",T"!D4Y5 VIHBD!UH&!&XV-%M0Z0,
M?A3P3UH'!)FFZ$C>F!GX4IZ4#DXVS33&]+?>F)/6@<]*43$C--O2!C- A!!F
M*9.-Z4B3&"-Z6X/6@*D(VH01FE./2@<XI2.U-.*:8R-J!R:C4D*&4S12*%1$
M9@=*"B_9),E @]JH.-J03J$?*MH[FHW&DK$*S\J#%.XG:A)WJX_:E,J&U4ER
4#VH!U'_)HT'R[5'/>*))P!0?_]D[
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

12. [wxsig] Re: Debugger rework

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Fri, 17 Mar 2000 07:52:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71683-2000.03.17-06.52.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/17/00 12:09 AM, William Beals at wmbeals@compuserve.com wrote:

> own. This has the advantage of being very cheap (free), but has a
> drawback. The chip generates VPP from +5V and VPP lags VCC by about 2.5ms

 It would seem logical, it is going to take a finite period of time to
accumulate enough charge to "pump it up"

Solution is equally logical ....

I was wondering about the schematic when I saw that "reset" was a NC switch
in the Vcc line ... I am more or less used to seeing a "Reset" line with an
NO switch to ground.

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Added three more beta testers

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 17 Mar 2000 11:07:11 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71715-2000.03.17-10.06.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Welcome aboard to Jim, Russ, and Rex. Here's the tally so far..

Beta Tester	Call Sign	Email	Quantity
Will Beals	N0XGA	wmbeals@compuserve.com	2
Russ Chadwick	KB0TVJ	kb0tvj@bouldernews.infi.net	2
Steven Bible	N7HPR	n7hpr@tapr.org	1
John Koster	W9DDD	w9ddd@tapr.org	1
Steve Dimse	K4HG	k4hg@tapr.org	1
Guy Story	KC5GOI	kc5goi@tapr.org	1
Doug McKinney	KC3RL	kc3rl@tapr.org	1
Brian B. Riley	KA2BQE	ka2bqe@amsat.org	1
Aaron Morrison	AE4KO	ae4ko@amsat.org	1
Jim Blair	WA5MYI	jblair@cfl.rr.com	1
Russ Hummel	WB4PGT	hummel@hsc.vcu.edu	1
Rex Blaine	KI0BJ	jblaine@nemontel.net	1
kits open			4
		Total	18

- Steve N7HPR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] New temperature sensor

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Fri, 17 Mar 2000 19:06:59 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71786-2000.03.17-20.06.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is Dallas Semiconductor's response to a question (given below)
about installing the new temperature sensors in the 1-Wire weather
station. My approach will be to remove the old temperature sensor,
because I will mount the new temperature sensor in a seperate ventilated
enclosure (instructions on how to build this enclosure will be coming).

Russ

> -----Original Message-----
> From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> Sent: Thursday, March 16, 2000 3:16 PM
> To: 'Barry Thomas'
> Cc: 'weather@ibutton.com'
> Subject: [weather] RE: Instralling the new chips
>
> Hi Barry,
>
> Frankly, it is not essential that the DS1820 inside the weather
> station be replaced. Unless the degree jump problem that can occur
> around freezing is unacceptable to you, any offset can be compensated
> for in software when the next software comes out.
>
> That aside, you will have to take the station down and open it up.
> Note the way the existing DS1820 is mounted (face down with the
> package toward the board centerline. Clean any weather proofing off
> the leads and desolder the part. Form the leads on the replacement
> DS18S20 to match the old unit and solder it down. Clean off the flux
> residue and recoat the leads and solder pads with weather proofing.
> You can use something like shellac or clear paint, etc.
>
> Run the weather station using TMEX iButton Viewer and record the ID
> address (serial number) for the new DS18S20. This part has an ID
> address ending in -10. Locate the ini.txt file in your weather station

> folder, make a backup copy and store it in a safe place. Open the
> ini.txt file and replace the old DS1820 ID address (the one ending in
> -10) with the ID address of the new DS18S20. Save the modified ini.txt

> back to your weather station folder.
>
> Run the weather station software and confirm that it reads temperature

> from the new DS18S20. Don't forget to reseal the weather station case
> before you remount it. Refer to the assembly instructions on the
> weather station homepage at http://www.ibutton.com/weather/index.html.

>
>
> Packaging the second DS18S20 to use with the weather station depends
> alot on where you are going to use it. For example, some users have
> mentioned that they want to record the water temperature in their
> pool. Obviously, this requires a water proof enclosure. For use as an
> indoor temp sensor, attach the leads to a cable of suitable length
> with a RJ11 connector on the other end. Plug it into the DS9097U
> adapter while running TMEX iButton Viewer to verify it is connected
> properly, then coat it with something like RTV clear silicone. You
> will have to use a 2-to-1 adapter on the DS9097U. Make sure all
> connections are straight through. Refer to the FAQs on our webpage for

> more information on making the connections.
>
> Anyone like to share how they connected their second DS1820
> temperature sensor?
>
> Regards,
>
> Dan
> Dan Awtrey   Staff Engineer
> Dallas Semiconductor   Phone: 972-371-6297
> Building C   FAX: 972-371-3715
> 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> Dallas, TX 75244-3292
> http://www.ibutton.com
>
>
> -----Original Message-----
> From: Barry Thomas [mailto:lhfarm2@reliable-net.net]

> Sent: Tuesday, March 14, 2000 4:59 PM
> To: weather@ibutton.com
> Subject: [weather] New chips!
>
>
> Well the replacement chips arrived this week. I'm afraid I need some
> help
> in figuring out how to make the changes. Would it be possible to post

> some
> instructions for replacing the chip in the weather station and some
> possible
> ways of packaging the spare chip? Any help - especially pictures -
> greatly
> appreciated!
>
> Thanks,
> Barry
>
>
> ---

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] Reset Switches, etc.

From: William Beals <wmbeals@compuserve.com>
Date: Fri, 17 Mar 2000 21:09:18 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71799-2000.03.17-22.03.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Good Evening Folks:

Brian: As you can tell, the Reset switch isn't really a reset switch at
all. It is a normally closed switch that supplies power to the
microcontroller. I then rely on the microcontrollers internal reset
circuitry to do the actual reset. This seems rather weird but has definite
purpose. I need to provide both a reset function as well as a way to get
into the 6808s debug mode. The ONLY way to enter debug mode on the 6808 is
to cycle power, a plain reset does not work. This solution (almost) gave
me both for the price of one switch. I just need that extra resistor.

For those interested, you can download the manual for the MC68HC908GP32 at:
http://ebus.mot-sps.com/ProdCat/psp/0,1250,68HC908GP32~M98634,00.html
The manual is near the bottom of the page.

All: My DS18S20's arrived today (fast service!) I'll start looking at
them this weekend.

All: My peet format is at 9600 baud Steve B says it needs to be 2400.
 This is kind of a pain due to some timing assumptions I make internally,
but needs to be done.

Efforts this weekend will be to update the Peet format to 2400 baud, look
into DS18S20 support, and continue with the rain guage support with the
time left.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

16. [wxsig] T238 arrival?

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Fri, 17 Mar 2000 23:56:21 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71802-2000.03.17-22.55.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve, I know you have to get the LCD units, but I guess we would all be interested in knowing a ballpark figure on when you think you will ship the units ... beginning of next week, end of next week, the following week ... I need to plan, my I_wanna_do's, Honey_do's, and Gotta_do's for the next three weeks and have time to focus on getting it up and running ... it is still winter here as we were reminded by 8 inches of snow last night despite the fact my daffodils are well up though not blooming ... sigh ... on the other and skeeters aren't much of a problem here save for about 6 weeks in the summer.

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

17. [wxsig] Some general theory

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 18 Mar 2000 09:03:58 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71889-2000.03.18-10.03.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

(this is sort of in response to Steve B's question on bit banging, but hopefully is a good explanation on the basics of my weather station code structure for those interested)

The way I have set up my current code, ALL the data gathering and UART transmission functions are done in the background by interrupt driven tasks. It has the very nice benifit that my foreground task is only responsible for the display and user interface. This gets me very nice response time to user commands and can essentially allow me to do whatever I want with the user. The user code doesn't have to worry at all about the weather code at all, it is pretty cool. I could for example be able to traverse all the menus (except setup) while still doing weather (I don't do that by the way).

I have a timer-based interrupt that fires every 100ms. That interrupt traverses a 50-state sequence that runs all my data gathering and reporting. It also does other things like updating the clock, scanning the keyboard, etc. (see timirq.asm). During each of these states, I do a piece of the weather gathering and reporting sequence. My rule of thumb is that each interrupt should last no more than 10ms, leaving 90% of the CPU cycles for the user task. For the data sent out the UART I bascially break the message up into two parts and queue up up to 25 characters for each 100ms interrupt. All the timer interrupt does is queue up the message and then enable the UART interrupts so that the UART can go off and send its data in the background. The UART interrupt routine then sends out the message a character at a time also in the background. This (IMHO) is really cool as ALL this is going on in the background while my main task is taking care of the user.

My current code assumes the first half of the message is sent before the next timer interrupt queues up the second half of the message. For the Peet format at 2400 baud this is not the case. I have broken the message up into two 22-character pieces. At 2400 baud, it takes about 101ms to send the characters (22chars x 11 bits / 2400 bits/sec), so some data in the middle of the message gets lost. My choices are to break the message up into three pieces or to shorten the first message a bit and let the second part last much longer than 100ms. The first option means Peet

requires a different sequencer than the other two formats while the latter
means I need to grow my message buffer above the 25 bytes it is now,
chewing up memory. What is annoying is that over 50% of the characters I'm
sending are dashes because that is what the Peet format says. Wah!! I
will likely opt for the latter solution.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] DS18S20s

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 18 Mar 2000 09:07:56 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71890-2000.03.18-10.03.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve (and all):

The DS18S20s do not arrive automatically. You need to request them. Below
is the email explaining how. The important bit is in the second paragraph
on who to send the email request to.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

```
begin 600 MSG00000.TXT
M1G)O;3H@4G5S<R!#:&%D=VEC:R \0VAA9'=I8VM >F5U<RYF<VPN;F]A82YG
M;W8^#0I4;SH@(B=K8C!T=FI 8F]U;&1E<FYE=W,N:6YF:2YN970G(B \:V(P
M='9J0&)O=6QD97)N97=S+FEN9FDN;F5T/@T*0V,Z( T*4W5B:F5C=#H@1E<Z
M(%MW96%T:&5R72!$4S$X,C @<F5P;W)T#0I$871E.B!4=64L(#<@36%R(#(P
M,# @,34Z-3(Z-#(@+3 W,# -"@T*#0H-"@T*/B M+2TM+4]R:6=I;F%L($UE
M<W-A9V4M+2TM+0T*/B!&<F]M.@E$86X@07=T<F5Y(%M33510.D1A;BY!=W1R
M97E 9&%L<V5M:2YC;VU=#0H^(%-E;G0Z"51U97-D87DL($UA<F-H(# W+" R
M,# P(#,Z-# @4$T-"CX@5&\Z"2=W96%T:&5R0&EB=71T;VXN8V]M)PT*/B!3
M=6)J96-T.@E;=V5A=&AE<ET@1%,Q.#(P(')E<&]R= T*/B -"CX@06QL+ T*
M/B -"CX@#0H^($1A;&QA<R!396UI8V]N9'5C=&]R)W,@5&AE<FUA;"!%;F=I
M;F5E<FEN9R!G<F]U<"!H87,@=W)I='1E;B!A(')E<&]R= T*/B!O;B!T:&4@
M1%,Q.#(P($1I9VET86P@5&5M<&5R871U<F4@<V5N<V]R('5S960@:6X@=&AE
M(#$M5VER92!W96%T:&5R#0H^('-T871I;VYS(&EN(')E<W!O;G-E('1O('1H
M92!C;VUM96YT<R!M861E(&)Y(&UE;6)E<G,@;V8@=&AE(&EN=&5R97-T#0H^
M(&=R;W5P(')E9V%R9&EN9R!T96UP97)A='5R92!A8V-U<F%C>2X@5&AE(')E
M<&]R="!C86X@8F4@9F]U;F0@870-"CX@:'1T<#HO+W=W=RYI8G5T=&]N+F-O
M;2]W96%T:&5R+W)E<&]R="YP9&8@+@T*/B -"CX@5V4@=VEL;"!R97!L86-E
M(&%N>2!W96%T:&5R('-T871I;VX@=&5M<&5R871U<F4@<V5N<V]R("A$4S$X
M,C I(&]N(&$@,@T*/B!F;W(@,2!B87-I<R!W:71H('1H92!N97<@86YD(&EM
M<')O=F4@1%,Q.%,R,"!A="!N;R!C:&%R9V4N(%1H92!S96-O;F0-"CX@<V5N
M<V]R(&-A;B!B92!U<V5D(&%S(&%N(&EN9&]O<B!T:&5R;6]M971E<B!I9B!Y
M;W4@;&EK92X@16UA:6P@1&%N9R!A= T*/B!;9&%N9RYN9W5Y96Y 9&%L<V5M
M:2YC;VU=(&%N9"!S=&%T92!T:&4@;G5M8F5R(&]F('1E;7!E<F%T=7)E('-E
M;G-O<G,-"CX@>6]U(&AA=F4@86YD('-H92!W:6QL('-H:7 @>6]U('1W:6-E
M('1H870@;G5M8F5R(&9R964N(%1H92!N97<@<V5N<V]R<PT*/B!A<F4@9')O
M<"UI;B!R97!L86-E;65N=',@;V8@=&AE(&5X:7-T:6YG($13,3@R,',@=&AA
M="!U<V4@=&AE($1A;&QA<PT*/B!396UI8V]N9'5C=&]R(%=E871H97(@4W1A
```

```
M=&EO;B!S;V9T=V%R92X-"CX@#0H^(%1H97-E(&YE=R!T96UP97)A='5R92!S
M96YS;W)S('=I;&P@<F5Q=6ER92!A('-O9G1W87)E('!A=&-H($E&('EO=2!L
M;V<-"CX@=&AE('1E;7!E<F%T=7)E(&1A=&$@<F%T:&5R('1H86X@:G5S="!V
M:65W(&ET(&]N('1H92!S8W)E96XN(%=E(&%R90T*/B!W;W)K:6YG(&]N(&$@
M<&%T8V@@9F]R(&QO9V=I;F<@<V\@:70@=VEL;"!C;W)R96-T;'D@:6YT97)P
M<F5T('1H90T*/B X-2XP,# P(&1E9W)E92!#(&5R<F]R(&-O9&4@6T%!:"!I
M;B!B>71E(# L(# P:"!I;B!B>71E(#$L(#!C:"!I;B!B>71E#0H^(#8@86YD
M(#$P:"!I;B!B>71E(#==(&%N9"!A<VL@9F]R(&$@<F5T<GD@:6YS=&5A9"!O
M9B!L;V=G:6YG('1H92!E<G)O<@T*/B!C;V1E(&%S(&$@=F%L:60@=&5M<&5R
M871U<F4N( T*/B -"CX@1G5R=&AE<FUO<F4L('=E(&%R92!I;B!T:&4@<&QA
M;FYI;F<@<W1A9V4@;V8@82!N97<@=V5A=&AE<B!S=&%T:6]N#0H^(')E;&5A
M<V4@=&AA="!W:6QL(&EN8V]R<&]R871E(&UA;GD@;V8@=&AE('-U9V=E<W1I
M;VYS('1H870@=&AE(&=R;W5P#0H^(&AA<R!M861E(&]V97(@=&AE(&QA<W0@
M,34@;6]N=&AS+B!4:&ES('-O9G1W87)E('=I;&P@86-C97!T('5S97(-"CX@
M<F4M8V%L:6)R871I;VX@;V8@=&AE('1E;7!E<F%T=7)E('-E;G-O<B!S;R!T
M:&%T('-T<F5S<R!I;F1U8V5D#0H^(&EN86-C=7)A8VEE<R!T:&%T(&UI9VAT
M(&]C8W5R('=I=&@@=&AE(&]R:6=I;F%L($13,3@R,"!C86X@8F4-"CX@8V]M
M<&5N<V%T960@9F]R('=I=&AO=70@<F5M;W9I;F<@=&AE('-E;G-O<BX@5&AE
M(&YE>'0@<F5L96%S92!W:6QL#0H^(&%L<V\@:&%V92!P<F]V:7-I;VYS(&9O
M<B!M86YY(&YE=R!K:6YD<R!O9B!S96YS;W(@=&AA="!A<F4@=6YD97(-"CX@
M9&5V96QO<&UE;G0@:6YC;'5D:6YG(&AU;6ED:71Y(&%N9"!P<F5S<W5R92X-
M"CX@#0H^(%1H86YK<R!F;W(@>6]U<B!T:&]U9VAT9G5L(&-O;6UE;G1S+B!%
M86-H(&]F('1H96T@:&%S(&-O;G1R:6)U=&5D('1O#0H^(&UA:VEN9R!A(&)E
M='1E<B!W96%T:&5R('-T871I;VXN#0H^( T*/B!296=A<F1S+ T*/B -"CX@
M#0H^($1A;@T*/B!$86X@07=T<F5Y(" @(" @(" @(" @(" @(" @(" @
M("!3=&%F9B!%;F=I;F5E<@T*/B!$86QL87,@4V5M:6-O;F1U8W1O<B @(" @
M(" @(" @4&AO;F4Z(#DW,BTS-S$M-C(Y-PT*/B!"=6EL9&EN9R!#(" @(" @
M(" @(" @(" @(" @(" @(" @($9!6#H@.3<R+3,W,2TS-S$U( T*/B T
M-# Q(%,N($)E;'1W;V]D(%!K=WDN(" @(" @($4M;6%I;#H@9&%N+F%W=')E
M>4!D86QS96UI+F-O;0T*/B!$86QL87,L(%18(#<U,C0T+3,R.3(-"CX@:'1T
M<#HO+W=W=RYI8G5T=&]N+F-O;2 @#0H^( T*/B M+2TM+2TM+2TM+2TM+2TM
M+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM+2TM
M+2TM+2TM+2TM#0H^("TM+2TM+2T-"CX@5&AI<R!M97-S86=E(&)R;W5G:'0@
M=&\@>6]U(&)Y('=E871H97) :4)U='1O;BYC;VTN#0H^(%1O('-U8G-C<FEB
M92P@<V5N9"!A;B!E;6%I;"!W:71H(")S=6)S8W)I8F4@=V5A=&AE<B(@:6X@
M=&AE($)/1%D@;V8-"CX@=&AE#0H^(&UE<W-A9V4@=&\@=V5A=&AE<BUR97%U
M97-T0&E"=71T;VXN8V]M+@T*/B!4;R!U;G-U8G-C<FEB92P@<V5N9"!A;B!E
M;6%I;"!W:71H(")U;G-U8G-C<FEB92!W96%T:&5R(B!I;B!T:&4@0D]$60T*
M/B!O9B!T:&4-"CX@;65S<V%G92!T;R!W96%T:&5R+7)E<75E<W1 :4)U='1O
M;BYC;VTN#0H^($9O<B!M86IO<F1O;6\@;6%I;"UL:7-T(')E;&%T960@<')O
M8FQE;7,@;W(@<75E<W1I;VYS+"!P;&5A<V4@8V]N=&%C= T*/B!O=VYE<BUW
796%T:&5R0&E"=71T;VXN8V]M+@T*#0IA
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

19. [wxsig] Re: Some general theory

```
From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sat, 18 Mar 2000 12:15:47 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71896-2000.03.18-11.15.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

on 3/18/00 11:03 AM, William Beals at wmbeals@compuserve.com wrote:

>
> My current code assumes the first half of the message is sent before the
> next timer interrupt queues up the second half of the message. For the
> Peet format at 2400 baud this is not the case. I have broken the message
> up into two 22-character pieces. At 2400 baud, it takes about 101ms to
> send the characters (22chars x 11 bits / 2400 bits/sec), so some data in
> the middle of the message gets lost. My choices are to break the message
> up into three pieces or to shorten the first message a bit and let the
> second part last much longer than 100ms. The first option means Peet
> requires a different sequencer than the other two formats while the latter
> means I need to grow my message buffer above the 25 bytes it is now,
> chewing up memory. What is annoying is that over 50% of the characters I'm
> sending are dashes because that is what the Peet format says. Wah!! I
> will likely opt for the latter solution.

 OK, now if I understand this right, what you are doing here is trying to
emulate the output of the Peet Weather station, if so, why is this so
important? There must be a another format that Win/Mac/DOS/whatevr APRS can
take at 4800 and then there is no problem ... or am I missing something?

```
  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys  <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

20. [wxsig] New Temperature Sensor

```
From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 18 Mar 2000 10:34:25 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71900-2000.03.18-11.33.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

I just did a calibration by immersing one of the new temperature sensors (DS18S20), in a stirred ice water bath. I wrapped the sensor in one layer of dry cleaning plastic (which is real thin) and put it in the ice and water which is in a thermally insulated cup. The reading from the T238 display was 32 degrees F. This is much better than the old temperature sensor (DS1820), which would read about 2 degrees F low. This is very good news!!! I've only done this for one sample, but will repeat the test for other samples when I get them mounted. I mount them in 3-way Molex connectors for easy change out.

Another thing that I found is that you can unplug the LCD display from the T238 board and the T238 will continue to function and read the 1-Wire wx sensors, average the data and send the averaged data to the TNC. In short, once things are running, you don't need the display anymore. Of course, you have to go to the APRS program running on the computer to see the data. I run the weather station into a stand-alone KPC-3+ TNC and radio which sends the weather data the 100 feet to my home station and APRSdos every 5 minutes. This allows me to do the calibration testing and run the outdoor weather station at the same time using two T238 boards and only one LCD display, which is the one from the wirewrap prototype. This is neat stuff.

One suggestion is that we have two types of set-up. One, like we have now, that determines all of the serial numbers and a second one which keeps the serial numbers of all the equipment that is "up the pole" and determines only the ones that are not "up the pole". This will allow change of the temperature sensor, and eventually rain gauge, barometer, and humidity device without "climbing the pole" each time.

Russ
kb0tvj

```
---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

21. [wxsig] 1.07.1R Release

```
From: William Beals <wmbeals@compuserve.com>
Date: Sat, 18 Mar 2000 10:40:09 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71901-2000.03.18-11.34.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Folks:

I'm just sending this to the WX-SIG, it is not on the website. This fix is to get the Peet format going at 2400 baud. If Steve B. says it works OK, then I'll put it up on the website.

will

```
------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
```

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

```
begin 600 Wx08.s19
M4S$Q,T9&1$,X,# P.# P-#@P,#@X,#!#.# Q,#@P,30X,#$X.# Q0T$Q#0I3
M,3$S1D9%0S@P,C X,#(T.# R.#@P,D,X,#,P.# S-#@P,S@X,#-#.3$-"E,Q
M,#=&1D9#.# T,$8P,# T1 T*4S$Q,T8P,#!#0T8P,#E#0T8Q0D5#0T8Q0T%#
M1$8P,3=#1$8P-$1#1#A!#0I3,3$S1C Q,$8Q-T%#1$8P.# R,#,R,T8P,#9%
M,#<P-#-&,#$V13@P,$,-"E,Q,3-&,#(P,#4V13 V,#(S1C V,T8P,S9%1D8P
M-S$P,49"-C Q031$0PT*4S$Q,T8P,S W.$$Q-C R-C$T038T,$(W,3-!-C!#
M0C<Q-$$V,#!"-SA&#0I3,3$S1C T,#$U038S,D(W,3E#1$8R03DX,3E#0T,X
M,#0T-#5&,#<V,T8-"E,Q,3-&,#4P0T1&,$8T0T1&,3)#,C1&-4$Q-3,R-C$S
M0T1&,3)#,C1"1 T*4S$Q,T8P-C!%0T$Q-#@R-C!!0T1&,3)#,C1%,T$Q,$0R
M-C Q.#%#1#@S#0I3,3$S1C W,$8Q,D,R-$0Y,C!&.34S-38S,3)%,S S,3)%
M,S P1# P.#4-"E,Q,3-&,#@P-D4X,#0X,T8T.4$V-3-#1$8Q,#%!-C0Q0T1&
M,3 Q0C9!00T*4S$Q,T8P.3 T.$-$1C$P-T(V-#E#1$8Q,#=!-C!$0T1&,3 Q
M0T1&,39"#0I3,3$S1C!!,#)#03$U,S(V-#E#1$8Q,D-!,30T,C8T,C-&-$5#
M1$8Q-$(-"E,Q,3-&,$(P-$8R-#-"0D4T13A#13<T,#-#-$5"-C1%03$P.#(V
M144Y- T*4S$Q,T8P0S!#1$8Q,D-"-S1%0T1&,3)#03$P1#(V,C)#1$8Q03$R
M-$5!#0I3,3$S1C!$,#$W0C8T.4%",#A"-S0Y0C8T.$$Y,#!"-S0X0C8T14$Q
M,3@-"E,Q,3-&,$4P-$0R-T$R03$U.#(V,#<X,30U1C!&,$-$1C!&-#(P1D4V
M0@T*4S$Q,T8P1C U,S0V,$0P,$8V,C<P.4(W,3@P1#$V1D1!1C Q,C!&-#A$
M#0I3,3$S1C$P,#@Q0C<Q.#!$,39&1#@Q.#<V,D$T,$8Y-SA#1#9&,3%#-C@-
M"E,Q,3-&,3$P041%1C@V030P1CDW1#9&,3%#041%-C@Q,S S,3,R,S-#,@T*
M4S$Q,T8Q,C S-#,U,S8S-S,X,SDV,38R-C,V-#8U-C8S1C1",T8T03)##0I3
M,3$S1C$S,#-&-$-"-C$V030R,#(V,3,S0S1",C9&-C-#-$$R-D8R,S8-"E,Q
M,3-&,30P,T,T0T(V-$-!,3 X,C9%031&.3@X,4(V,3@Y.3@Q0T0U0@T*4S$Q
M,T8Q-3!&,3)#,C0Q-4-$1C$V03(T,3 V,D(W-$9#1$8Q,D,R-#@S#0I3,3$S
M1C$V,# X0T1&,39!,C0P,T)"-$8Y.3@Q.$-!13!&1#%&,3%#1CD-"E,Q,3-&
M,3<P,C<P-35!,D%&.#DX.#$Y1CDY.#%#1$8Q.#<T1D-$,#%!1@T*4S$Q,T8Q
M.#!#,#(T,#$X,4-#1C!%.#0U,#%#,#,U-$$T-48Q1# W138X#0I3,3$S1C$Y
M,#1#.$(X.34U-$$U131#,S4T03@X.$$V-48R-#DR-D5&-T,-"E,Q,3-&,4$P
M.#$T-3 Q0S S-31!-#5&,C0Y-T4T0SA".#DU-31!-45&00T*4S$Q,T8Q0C T
M0S,U-$$X.#A!-C5&,D$Y,C9%1D-$,#%#,#@Q,S4T.$-$#0I3,3$S1C%#,$-$
M1C$X-T$V,#$Y0D-$,#%#,#@Q.4(S-30X0T-&,4$Q,D8-"E,Q,3-&,40P-$0R
M-C%#-D4X,#0X,T8T.4%$,34R-#$R-D4X,#0Y040P,@T*4S$Q,T8Q13 P13(T
M,$(S1C0Y,T,T.$(V-#A!,48P,C9%0CDY.#%!1#9"#0I3,3$S1C%&,#)&,C4R
M0T$V,#)#-T9%,#A#-D9&-T4U-30X1C=!-C!!.$8-"E,Q,3-&,C P040S1D$V
M,$%#-T9%,#A!-C Q040R.$$V,#A#-T9%,#@Y00T*4S$Q,T8R,3!!-C U040R
M1$$V,#!#-T9%,#A!-C Q040R-$%$,#$X,31"#0I3,3$S1C(R,#4U-#A&-C0S
M,C8P0D%&,#$Y1D(X-#E!,3@P,C9&,SDY0C -"E,Q,3-&,C,P.#$Y.#@Q-48X
M0T%&,#$V-3 S13@R-D8Y-$$R-D8T.$,S-@T*4S$Q,T8R-# X,3E$.40Y1#E$
M-$$R-D8Y.#%!-C Q0S=&13 X0S9&1D$R#0I3,3$S1C(U,#=%-34T.$8W038P
M04%$-#E!-C Y0S=&13 X038P-4%$,44-"E,Q,3-&,C8P-# U-30X,S4T030U
M,# T,#=%-$,X0C@Y-34T035%-$,Y,@T*4S$Q,T8R-S S-31!038Q14%$,D(X
M.#A!.49!-# W03$P,#(V13E!-D)$#0I3,3$S1C(X,# X0S=&13 X038P-4%$
M,3E!-C P0S=&13 X038P,4%$-D0-"E,Q,3-&,CDP,3 Y.3@Q-48X0T%&,#$V
M-3 S13@R-D8Y-$$R-D8T.$,T-@T*4S$Q,T8R03 X,3E$.40Y1#E$-$$R-D8Y
M.#$V13@P-$0S1C1"038R.$4X#0I3,3$S1C)",$-$1C)%.3-&-$1!-C(X0T1&
M,D4Y038Q-$-$1C)%.4$V.3@-"E,Q,3-&,D,P,$-#1$8R13E!-C V0T1&,D4Y
M038P,D-$1C)%.4$V,#$S0@T*4S$Q,T8R1#!#1$8R13DT-48S,D(S-30X,T8T
M0D$V.#!!1#!"040S-C4W#0I3,3$S1C)%,#-&-$)!-D,P040P,T%$,D4X,3DW
M0C8P-$%!1D5"-S T-D$-"E,Q,3-&,D8P.49!-$8P0D$T0D(W,# Q-C P-C(V
M,C$W,# S1#1$,C8W00T*4S$Q,T8S,# P1CE&-C)!-$8P0D$T0D(W,# Y1#$V
M,# V,C8R,3<P,#!"#0I3,3$S1C,Q,$$V,#)#1$8R.3,X,39%,#(T0D$V,31"
M-S1#-34T.$8V-C,-"E,Q,3-&,S(P048P,3,U-#A!1$,S,T$T0S(V1C,X,31$
M-D8V138Y-S0Q-0T*4S$Q,T8S,S V1C<R,C U-C8U-S(R,#,Q,D4S,#,Q,D4S
M,#0S,C U,T$W#0I3,3$S1C,T,#<T-C$W,C<T,C T1#1&-$4S,#,X,C V1C9%
M,C U,#0S1$,-"E,Q,#9&,S4P,D4R13)%,D,-"E,Q,3-&.# P,3 Q1D-!,C4P
M,# P,#!%03$R0T)"0S!!,# P,# P.3-"-@T*4S$Q,T8X,3 Q1#9#0S0P,# P
M,# P,#0P,# P,# P,# P,# P,# P,#4W#0I3,3$S1C@R,$9&1D9&1D9&1D9&
M1D9&1D9&,49&1D9&1D9&1D9&1D9&1C(-"E,Q,3-&.#,P1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9$- T*4S$Q,T8X-#!&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&1D,T#0I3,3$S1C@U,$9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&0C0-"E,Q,3-&.#8P1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9!- T*4S$Q,T8X-S!&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1CDT#0I3,3$S1C@X,# Q,D9!,C8P,#,P,# P-D(P
M,3,R03(V,# S,# P,#=!,C(-"E,Q,3-&.#DP,#$R,T$R-C P,S P,# Q-C Q
M,C9!,C8P,#,P,# P1D1&0PT*4S$Q,T8X03 P,3)#03(V,# S,# P,#,R,#$S
M0D$R-C P,S P,#!%0T,S#0I3,3$S1CA",# Q,SA!,C8P,#,P,# P0C4P,3,U
M03(V,# S,# P,$9&,3<-"E,Q,3-&.$,P1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D8T- T*4S$Q,T8X1#!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1C,T#0I3,3$S1CA%,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&,C0-"E,Q,3-&.$8P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D8Q- T*4S$Q,T8Y,# P,# P,#!&1D9&1D9&1D9&1D9&1D9&1D9&
```

```
M1D9&1D9&1C P#0I3,3$S1CDQ,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1C,-"E,Q,3-&.3(P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9%,PT*4S$Q,T8Y,S!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D0S#0I3,3$S1CDT,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&0S,-"E,Q,3-&.34P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9",PT*4S$Q,T8Y-C!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D$S#0I3,3$S1CDW,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M.3,-"E,Q,#8X,# P0T,X,#0W138-"E,Q,#8X,# T0T,X,#0W13(-"E,Q,#8X
M,# X0T,X,#0W1$4-"E,Q,#8X,#!#0T,Y,#)"138-"E,Q,#8X,#$P0T,X,#0W
M1#8-"E,Q,#8X,#$T0T,X,#0W1#(-"E,Q,#8X,#$X0T,X,#0W0T4-"E,Q,#8X
M,#%#0T,X,#0W0T$-"E,Q,#8X,#(P0T,X,#0W0S8-"E,Q,#8X,#(T0T,X,#0W
M0S(-"E,Q,#8X,#(X0T,X,#0W0D4-"E,Q,#8X,#)#0T,X,#0W0D$-"E,Q,#8X
M,#,P0T,X,#0W0C8-"E,Q,#8X,#,T0T,X,T5!,$,-"E,Q,#8X,#,X0T,X,#0W
M044-"E,Q,#8X,#-#0T,X,#0W04$-"E,Q,#8X,#0P0T,X,#0W038-"E,Q,3,X
M,#0T0T,X,#0W-#4P,4)&.30X0S-&,#!"-C T030P1D%!,$4P0PT*4S$Q,S@P
M-31"-S T-D4P-C Q-D4X,# U,T8P,C9%1D8P-C-&,#,V13DQ#0I3,3$S.# V
M-$9&,#<Q,#%&,3@P,T$V,#)#1#DR.48Q.3 S038P,D-$.#$-"E,Q,3,X,#<T
M.3(Y1C$X,#-!-C R0T0Y,CE&,3DP,T$V,#)#1#DR.48T- T*4S$Q,S@P.#0Q
M.# S038P,D-$.3(Y1C$Y,#-!-C(X0T0Y,C4Y038R.$(W#0I3,3$S.# Y-$-$
M.3(S,D$V,31#1#DR,S)!-C!#0T0Y,C,R038P-D-$-# -"E,Q,3,X,$$T.3(S
M,D$V,#)#1#DR,S)!-C Q0T0Y,C,R038P,$-$.3$X1@T*4S$Q,S@P0C1"0T$V
M,#!#1#DQ.4-!-C$T0T0Y,CE&038P,4-$.3$Y0S S#0I3,3$S.#!#-$$V,31#
M1#DR.49!-C R0T0Y,3E#038Q-$-$.3(Y1C-&-3<-"E,Q,3,X,$0T048S1D(P
M,T9"0S-&0C%!-C Q0C=",D(W0C,S1D(T,T8V,PT*4S$Q,S@P131"-3-&0C8S
M1D(W,T9".#-&0CE!-D9&0C<V14(W0D9"-S R#0I3,3$S.#!&-$,P0C="03-&
M0SDS1D-!,T9#0C-&0S,S1D,T,T9#,3-&13@-"E,Q,3,X,3 T0S(S1C(V,T8R
M-T$V,#1"-S(P038U.$(W,C4Y04-#.#$Y. T*4S$Q,S@Q,30U,D$V1D9"-T)!
M,T9"0D(V0D)!0C U0T0Y,3E#0T0Y,C="#0I3,3$S.#$R-$(X03$P-#(W,$1!
M,3 Q,C9&-4(V0D(T0T$T,#-"-T)",C,-"E,Q,3,X,3,T,C!%-4(V0D,R-D9#
M0C9"0C(W,30T03(W,#@T03(W,#@P, T*4S$Q,S@Q-#0T03(W,#@R,$-#0T,X
M04$P0T,X0D9$0T,X0SA!,#$P,3DT#0I3,3$S.#$U-#0R0T0X.4,S,C8T-#-&
M045#-D8X,#!#1#A!.39#-D8X1D,-"E,Q,3,X,38T,#%#1#A!.39#-D8X,#)#
M1#A!.39#-D8X,#-#1#A!.39"10T*4S$Q,S@Q-S1#-D8X,#1#1#A!.39#-D8X
M,#5#1#A!.39#-D8X,#9#1# W#0I3,3$S.#$X-#A!.39#-D8X,#=#1#A!.39"
M-D%%,C<Q0D$V,45#1#DQ-$0-"E,Q,3,X,3DT.4,R,#!#038Q04-$.3$Y0S(P
M,#5!-C%"0T0Y,3E#039#1@T*4S$Q,S@Q030S,D-$.3(Y1D-#.#$Q-4-$.#,X
M,D-$.#1&-$-$.#9&,T0X#0I3,3$S.#%"-$-$.#5%-#-&.#@S1D,X,T9#-S-&
M0D$V13 T0T,S1D-$-D$-"E,Q,3,X,4,T0C9"0S0Q,#$R.$(V0D,Y-T$Q,#0R
M-C$T0C9#0T$Q,#!#, T*4S$Q,S@Q1#0R-C!%,T-#1$(V0T1!,3 T,C8P,C-&
M0T1"1D-#,C P.#1"#0I3,3$S.#%%-$)&0T,S1$,W,C=$03-&0S=#1#@Q1C0R
M,$0S0T,X,3$U-4$-"E,Q,3,X,48T0C9#1#(W,30T03(W,#@T03(W,#@T03(W
M,#@R,# Y0T,U.0T*4S$Q,S@R,#0X,C=&0T,X,D(U0T,X,S$U038P-$-$.3$Y
M0S-&0D4P131&#0I3,3$S.#(Q-$,Y,$5"-D$S03 V14(W.$%#1#@U.31!-C@U
M0T0X,S9&,#<-"E,Q,3,X,C(T0C8V1D$P-D5"-SA!0T0X-3DT038X0T-$.#,V
M1D(V-D5$-PT*4S$Q,S@R,S1!,#9%0C<X04-$.#4Y-$$V.3%#1#@S-D8P14-"
M,35#-C4W#0I3,3$S.#(T-$8Y,#%#1#@X,S9!-D,U0T0X,S9&0S9&.3 Q,C<P
M-4$V134-"E,Q,3,X,C4T,C!#1#DR,$)"-D-!031#,#(V,3!"-D$V0C<X04(V
M03<W. T*4S$Q,S@R-C1"-SA"0T0X-D$Y039#04-$.#,V,4(V-S9"-SA!0C8W
M-S!$#0I3,3$S.#(W-$(W.$)#1#@V03E!-D0R0T0X,S8Q.#%!-C%&0T0Y,3E#
M-$8-"E,Q,3,X,C@T,T9"13-#0D4S1CDP0C9#.4$T,T9"-SDQ0T0Y,D4P038Y
M,0T*4S$Q,S@R.30X1$-$.#,V1D(V0T%!-#-&0C<Y,4-$.3)%,$$V0S5#1#8X
M#0I3,3$S.#)!-#@S-D9"-D-"030S1D(W.3%#1#DR13!!-D-%0T0X,S9&0C8-
M"E,Q,3,X,D(T.#%!-C$U0T0Y,3E#,T9"13-#0D5"-D(R0C<Y,3-&.3 P00T*
M4S$Q,S@R0S1#1#DR13!!-C@P0T0X,S8Q0C9",T(W.3%#1#DR13!!-D9!#0I3
M,3$S.#)$-#@S0T0X,S8Q0C9",4(W.3%#1#DR13!!-C@V0T0X,S8Q.3<-"E,Q
M,3,X,D4T0C9"-$(W.3%#1#DR13!!-C@Y0T0X,S8Q0C9"-4(W.3$P,@T*4S$Q
M,S@R1C1#1#DR13!!-CA#0T0X,S8Q0C9".$(W.3%#1#DR13!!-D(Y#0I3,3$S
M.#,P-#DP0T0X,S8Q0C8X.$(W.3%#1#DR13!!-D,W0T0X,S8Q-#$-"E,Q,3,X
M,S$T.#%!-C$V0T0Y,3E#,T9"14(V0S-"-SA!0C9#-$(W.$)!0@T*4S$Q,S@S
M,C1#1#@V03E!-CA"0T0X,S8Q0C9"1D$Q1D8R-S!#.4$-"E,Q,3,X,S0T
M03 V14(W.$%#1#@U.31!-D-#0T0X,S9&0C9#,4(W.$$P-PT*4S$Q,S@S-31"
M-D,R0C<X0D-$.#9!.4$V1#)#1#@S-C$X,4-$.3(S,C(T#0I3,3$S.#,V-$(V
M.$1#1#DR,$)"-CA%0T0Y,C!".#%#1#DR,S)"-CA#-38-"E,Q,3,X,S<T0T0Y
M,C!"0C8X1$-$.3(P0D(V.$5#1#DR,$(X,4-$.$8U,PT*4S$Q,S@S.#0P.$,V
M1CDP,#(V-#=!-C$Y0T0Y,3E#-#4Y.48X0T0X1D,V#0I3,3$S.#,Y-#)!0C9!
M1D%",$%"-SDY0C8Q-D)%,3A!-#(P,C9&,D(V,$0-"E,Q,3,X,T$T049",3DY
M,C9&,C0U.3E&04-$.$8R04$V,$%#1#DR.49!. T*4S$Q,S@S0C0T-3DY1D-#
M1#A&,D$T-3E!,#9#1#A&,D$T-3E!,3-#1#)"#0I3,3$S.#-#-#A&,D$T-3E!
M,4-#1#A&,D%!-C$S0T0Y,3E#.#%"-D(R0T8-"E,Q,3,X,T0T03$P,C(V,$%"
M-D(Q030P,S(V,#1!-C%$,C P-T)%0C(S, T*4S$Q,S@S130X0S5!1#8Y.$0P
M.#$X0D(V,C5"-C(R04(U,#DW0C8R,3,Y#0I3,3$S.#-&-$$Y0S-"-S(V0D8R
M-S-#049!-C4X0C<R-4(V,#%!-#<X044-"E,Q,3,X-# T-#0T-#0T.3<X0T0V
M.3A#,$(W0D,S1$(Y,C8W,S-#0C<U,@T*4S$Q,S@T,31"-D(W03$P03(U-D(S
M1D(W038U0T(W,C4S0T(V0C9"-C=!#0I3,3$S.#0R-$$Q,T,R-35$,T9"-C-#
M0C5"-D(U03$S0S(U-3,S1D(U-$(-"E,Q,3,X-#,T,T-".$(V0CA!,3$X,C4Q
M0S-&0CA"-C9%0C="1D(V-D8R,@T*4S$Q,S@T-#1"-T,P0C9#,T(W0S%"-D,T
M0C=#,D$V1D9"-S9%,T8V1C4Q#0I3,3$S.#0U-#-&0S,S1D,T,T-"-$(V0C1!
M,3$X,C4R-3-&0C0S0T(S1# -"E,Q,3,X-#8T0T0X,T0R0C%",S(T,4%!-C Q
```

```
M0C=",S-#0C)"-D(R03$S. T*4S$Q,S@T-S0P0S(U,$5!-C Q0C=",C-#0C%"
M-D(Q03$V-#(U,#(S1D4V#0I3,3$S.#0X-$(Q,T1"03(V-C5"-D,X03$S,3(T
M,S1!,3$P,C0S-#0X0C@-"E,Q,3,X-#DT.3<X0T0V.#1!,S@W1#8X-$$T.#<X
M.#A!1D0R,#(T.#1$,0T*4S$Q,S@T031&0C@U,$0X-3!$.#4P1#@U,$0X-3!$
M.#4P13@U1C<X-C5!#0I3,3$S.#1"-$9#.#<P-S@W,4,X-S4R.#1#0CA%.#0X
M144Y.#1$-4%$1# -"E,Q,3,X-$,T,3,R,# R,T-#.#A!.#!#1#@U-D%#1#@V
M-CA#1#@W-C(S- T*4S$Q,S@T1#0X,3-#0S<X,3-#.#A"-C@X03$S0S(V,$(S
M1C@X0T0X-#8W#0I3,3$S.#1%-$8T0T0X-45#0T0X-D8S,T9#.#@Q038X,$(W
M,#4R,$0U040-"E,Q,3,X-$8T,T8W-#-&-S4S1D,U.#$Q1D,Y-#5&.# P0T0X
M.4$Y039"10T*4S$Q,S@U,#0T-$-$.#E&14$V.#9"-S U.#$X,4$V.#!"-S U
M-#5&.$,R#0I3,3$S.#4Q-# P0T0X.4$Y039"14-$.#E&13-&045#1#A!,3%"
M-T$S140-"E,Q,3,X-3(T0T0X03DV0T0X03$Q0T0X03DV0T0X03$Q0T0X03DV
M0T1$1@T*4S$Q,S@U,S0X03$Q0T0X03DV0T0X03$Q0T0X03DV0T0X03$Q0T0X
M03DW#0I3,3$S.#4T-#DV0T0X03$Q0T0X03DV0T0X03$Q0T0X03DV0T0X03$Q
M-T(-"E,Q,3,X-34T0T0X03DV0C9!13(W,#8S0T,Y,45#.3(P,#A"-D$S04(W
M1 T*4S$Q,S@U-C0V14(W03,S0T,U.#$P14,Y,C9"-C9%03%&1C(V,#A"-C$T
M#0I3,3$S.#4W-$$S0C<V14(W-D8R,#!%0C9!,T(Q-D4R,S R0C<V14(Q-C0-
M"E,Q,3,X-3@T-D8R-# R0C<V1D(V03-"0C<U0C<W-3(T,#(S0S<T.#$Q0PT*
M4S$Q,S@U.31"-CA!,D$P,30P045%-S0R-$0R03 Q-4,Y1C-$.$$R045$#0I3
M,3$S.#5!-# Q-#!!0C(P0C<Y.4(V.3DR03 Q-#!"-SDQ,T8Y,$-$0SD-"E,Q
M,3,X-4(T.3)%,$(V.3DR03$P0C8X1$$Q,C R-S V038R1$(W.$,W,0T*4S$Q
M,S@U0S0R,# T038R1$(W.$0X,4(V-S1"-SDP0C8W-4(W.3%"-C1$#0I3,3$S
M.#5$-$,U0C<Y,D-$.3)#,4(V.31!,#9%0C<X04-$.#4Y-#@Q-C4-"E,Q,3,X
M-44T,T8W,#-&-S$Q14-!,4-#03-&-S8S1C<W,T8W,C-&-S,X. T*4S$Q,S@U
M1C0S1D,V.#%"-D-!031#,#(W,$)"-D-!,$-#03 R030S1CE##0I3,3$S.#8P
M-$$T0D9"-T-!-#5&.#$P0T0X.4$Y0T0X03@V039!-4-$,T0-"E,Q,3,X-C$T
M.#E&14$V1$9#1#@Y1D5!-C Q0T0X.49%0T0X03$Q0T1#,@T*4S$Q,S@V,C0X
M03$Q0C=!-4-$.$$Q,4(W031#1#A!,3%#1#A!,3%#1$5"#0I3,3$S.#8S-#A!
M,3%#1#A!,3%#1#A!,3%#1#A!,3%#1#A!03 -"E,Q,3,X-C0T,3%#
M1#A!.$(R-S Y0C9#031#04%#,$(W0T$R,#$T0C8U10T*4S$Q,S@V-31!-4(P
M-S%"-T$W0C9!-$(R-S!"-T$V0C9!-4(W-S%"-D1##0I3,3$S.#8V-$$T0C<W
M,#@Q0C9#04$T0S R-C-!0C9!-T)"-S-"-S<S0D0-"E,Q,3,X-C<T0C9!-D(Y
M-S)"-S<R,T-#-D(V039",4,S,C4Q,#(R,#8Q,PT*4S$Q,S@V.#1"-D$W0C%#
M-#(S,#A"-D$V0C=#,T(V03="-T,T0C9!-D1"#0I3,3$S.#8Y-$(Q-S8R-3$P
M,C(P-D(V03=",3<W,C,P.$(V039"-S<V,34-"E,Q,3,X-D$T0C9!-T(W-S<X
M,3-&.3E"-CA!,C<P.$$Q,#$R-C%%039%,PT*4S$Q,S@V0C0W1D(W.3E"-CA"
M045%.30R-30T-C@W.49"0CDY.3<X-CDX#0I3,3$S.#9#-#4T-#8R03 Q-4-"
M1CDQ,T8Y,$-$.3)%,#@Q038S.4(W,$,-"E,Q,3,X-D0T.$1"-SA%.#%"-C<R
M0C<Y,$(V-S-"-SDQ0C9#-D(W.3(Y00T*4S$Q,S@V131#1#DR0S%"-CDS0C<X
M04(V.31"-SA"0T0X-D$Y.#%!13(Q#0I3,3$S.#9&-#!&.$,V1C<X-4$R049"
M.#$Q1D-"038S1D%$-CDR-S R13(-"E,Q,3,X-S T,45#0C@Q,$5#0C$Q038P
M,3-&03)#1#@Y,#9#1#@W03 S-0T*4S$Q,S@W,30R-# S,45#0C1&0C=!.#@Q
M,$5#0C(Y,S-!,D$V,#%#1$,W#0I3,3$S.#<R-#@Y,#9!1#<X,C0P-C%%0T(S
M1D$X,C Q.$(W.3E"0D$X03@-"E,Q,3,X-S,T0C=!.$$Q,#<R-C!%0C8Y.3(W
M,#1!,3 W,C8P-D(V03@T00T*4S$Q,S@W-#1!0C X0C=!.$(V03A#0D8X,CA!
M-#!&0C=!.#@Q038W1C!%#0I3,3$S.#<U-$%$,34R-S R,45#0C!&0T(P-#-#
M0T(Q14-".#%!-C<X1# -"E,Q,3,X-S8T0D)!.#DW.$,V0S P.#%"-SE!038P
M1D(W.44T-48X,#A%10T*4S$Q,S@W-S1#1#@Y03E#1#A!.#9!-C4U0T0X.49%
M038P-T-$.#E&14,U#0I3,3$S.#<X-$$V,#!#1#@Y1D5"-CE!0T0X.49%0T0X
M03$Q0T0X03$Q-S,-"E,Q,3,X-SDT0T0X03A",C<P-C-!.44R-D0T038P,3@Q
M,T8Y.4(V.3E!,0T*4S$Q,S@W030T.#0X-#@Y-SA#0C8T,$0Q1C@X,#(V,S5"
M-C0Q1#%&.#9##0I3,3$S.#="-#@Q,C8R14(V-#)$,48X.#(R-C(W0C8T,T0Q
M1C@X,S(V13$-"E,Q,3,X-T,T,C!"-C0T1#%&.#@T,C8Q.4(V-#5$,48X.#4R
M-C$R0C9#- T*4S$Q,S@W1#0T-D0Q1C@X-C(V,$)"-C0W1#%&.#@W,C8P-$(V
M.3DY.#9$#0I3,3$S.#=%-#@Q,T,Y.4(V.3E!,3 X,C-"-3DY.#$S1CDY0C8Y
M.30X1#(-"E,Q,3,X-T8T-#@T.#DW.$-"-C0P13$U,#(V,D5"-C0Q13$U,3(V
M,CA#0PT*4S$Q,S@X,#1"-C0R13$U,C(V,C)"-C0S13$U,S(V,4-"-C0T13$U
M-#1&#0I3,3$S.#@Q-#(V,39"-C0U13$U-3(V,3!"-C0V13$U-C(V,$%"-C0W
M-$0-"E,Q,3,X.#(T13$U-S(V,#1"-CDY.3@X,3-#.3E"-CDY03$P.#(S0D1#
M.0T*4S$Q,S@X,S0Y.3@Q044S,#0R04(R-T(W.3<Y1D$Y.3A"-SDV0C9!.#1"
M#0I3,3$S.#@T-$%%,#,T,D)".3<Y-T(V.39!.3 P.#<X03=%.$,W13A$,CD-
M"E,Q,3,X.#4T-T4X13@Q,T8Y,D$V,$9"-SE$038P-$(W.4$S1CDY0C8R, T*
M4S$Q,S@X-C0Y1$)".4%!-#!&.3<X0T(V.3E%0C<X0C<Y.3-!.4$R03,X#0I3
M,3$S.#@W-$5%0C8Y,D(Q.3DR,C X0C8Y.4(W.3)"-CE$0C<X.3-!13$-"E,Q
M,3,X.#@T.40R040V,T8Y,#-&.3%!-C T0C<Y1$(V.41"0C@Y.3<W. T*4S$Q
M,S@X.30X0T4V-SA"13E$-#)"0CDQ0C<Y,3E&0CDY,$(W.3 S031##0I3,3$S
M.#A!-#E$,C9%.$(V.3%!13)$-#)"-SDQ0C8Y,$)&.3!!13)$1CD-"E,Q,3,X
M.$(T-#)"0CDP0C<Y,$-$.3)#,4(V.#E!-#!&044R1#0R0D)&,@T*4S$Q,S@X
M0S0Y-$(W.3$Y1D(Y.3-"-SDP,S0Y,#,V.3%"-CDP,C<Q-C@T#0I3,3$S.#A$
M-$$Q,#$R,C V0C8Y,4$Q-C@R-3!#0C8Y,4$P-CA"-SDQ044-"E,Q,3,X.$4T
M0C8Y,$$R,#%"-SDP0T0Y,D4P.#$Y0D-$.#9&0SE!.40V1@T*4S$Q,S@X1C0Y
M0D-$.#<P-SE!.40Y0D-$.#<Q0SE!.40Y0D-$.#<U,D,P#0I3,3$S.#DP-#E!
M.#%"-SE&038Q,$(W.3A#1#@Y0S,R-D9"039&,$-$-$,-"E,Q,3,X.3$T.#E&
M14(V.49"-S0P038P.$(W.3E#1#A!,C8S-D$P0T0U10T*4S$Q,S@Y,C0X03(V
M,S9!,4(V-#!#1#@Y13!"-S0P,T$Y.3(V14)!-C!"#0I3,3$S.#DS-#,X0C<Y
M.4-$.$$R-C,Y.4%#1#A!,C8S.3E!0C8Y04$X,$8-"E,Q,3,X.30T,#$P,$$R
M,#$T-C0V,S8T-S,V-#8S-C0U,S8T-#,V-#,X. T*4S$Q,S@Y-30S-C0R,S8T
M,4(V-#<T.30Y0T0X.44P,T$Y.3(V1#0S1C1&#0I3,3$S.#DV-$%%0C8T,$-$
M.$$Y-D(V-#%#1#A!.39"-C0R0T0X03DV034-"E,Q,3,X.3<T0C8T,T-$.$$Y
```

```
M-D(V-#1#1#A!.39"-C0U0T0X03DV0C8X- T*4S$Q,S@Y.#0T-D-$.$$Y-D(V
M-#=#1#A!.39"-D%%,C<Q-S-&-# S1C8R#0I3,3$S.#DY-#0Q,T8T,C-&-#,S
M1C0T,T8T-3-&-#8S1C0W,T$Y.#(W.# -"E,Q,3,X.4$T,#-#0S@Y,$,X,4)&
M.3E!1#$V038U-4%$-$1!-C X0C<V-0T*4S$Q,S@Y0C0Y1$)%.3E&-C5#0D8Y
M.4%$-#$S03E$,C9&-#A#.#$Q,#$U#0I3,3$S.#E#-# U045&035!-C(V,C8R
M-C(R-D8Y,3$P-4$V1D9!140S0C4-"E,Q,3,X.40T0C0P,38R-C(V,C8R-4$R
M-D8W030P,3@Q,3 P-4$U,#%&00T*4S$Q,S@Y130R-S R,3$P-4%%,44U03(V
M1D0P,# Q,# T-D%%-4$U031%#0I3,3$S.#E&-#(V1D0Q,3 U044Q-#5!,C9&
M1#@Q040R0T%$1$5!1$1#.#D-"E,Q,3,X03 T041$04%$1#A!1$0V041$-$%$
M1#)!1$0P.#%!-D9&040W1@T*4S$Q,SA!,31#0D%$0SE!1$,W041#-4%$0S-!
M1$,Q041"1D%$0D1!1$,V#0I3,3$S.$$R-# W.#%!-D9&041"-C0Y.#%"-T%$
M0CA!04(W04)"-D$Y-40-"E,Q,3,X03,T0C=!03-&03E!-C X0C=!0T(V04(U
M1C0V,C0P,35#,T$Q,PT*4S$Q,SA!-#1!0S(V1CA"1D%#,#%!0S!#038P,4(X
M04%"-T%!039#,#8P#0I3,3$S.$$U-$(X03E"-T$Y0C9!0C5&-#@U.30X-3DT
M.#4Y-#@U.30X0S$-"E,Q,3,X038T-3DT.#4Y0C=!0T(X04%"-T%!.49".$$Y
M0C=!.4(V04,Q0PT*4S$Q,SA!-S0T.#4Y0C=!0T(X04%"-T%!.49".$$Y0C=!
M.4(V04-"-D%&#0I3,3$S.$$X-$%$.#$S1D%!,T9!.3@Q038P,4(X04$R-C T
M039",$(X,40-"E,Q,3,X03DT03DX,4(X044Y-SA#1#8Y.$8X0C=!13@Q038P
M,4(W0D5",PT*4S$Q,SA!031!-C Y0T0Y,3E#,T9"1#-#0CE!-C!%0T0Y,C,R
M,T8Y1# S#0I3,3$S.$%"-$(V.41!,3 U,C8Q1D$V,31#1#DQ.4-!-CA&0C<U
M,$(V0T$-"E,Q,3,X04,T0CA"-SDQ,T8Y,$-$.3)%,$(V.$1"-S4Q0C8X14(W
M-3)&. T*4S$Q,SA!1#0S1C4S0T,X0C0R038X-D(W-3!!-C)&0C<U,T(W-39!
M-CE%#0I3,3$S.$%%-#(P0C<U.4$V,T%"-S5#,T8U1D(V0C)"-SDQ,T8Y,$-$
M-S$-"E,Q,3,X048T.3)%,$(V.$1"-S4Q0C8X14(W-3)"-D(S0C<Y,3-&.3!%
M- T*4S$Q,SA",#1#1#DR13!"-CA$0C<U-$(V.$5"-S4U0C9",4(W.3$S1CDR
M#0I3,3$S.$(Q-#DP0T0Y,D4P0C8X1$(W-3="-CA%0C<U.$(V0C1"-SDQ,C@-
M"E,Q,3,X0C(T,T8Y,$-$.3)%,$(V.$1"-S5!0C8X14(W-4)"-D(U0C<V,PT*
M4S$Q,SA",S0Y,3-&.3!#1#DR13!"-CA$0C<U1$(V.$5"-S5%0T0Y,3@P#0I3
M,3$S.$(T-$8W0D4Y1#A#1#8Y.$8R0T0Y,C,R0C9"0T$Q1D8R-T9!,4(-"E,Q
M,3,X0C4T03$P-#(W,3!!,3 P,C<P.$$Q,#(R-S!"03$P,S(W,#="00T*4S$Q
M,SA"-C0S1D)$,C!%-D-#.$)%-4$V,#%"-SDY0C9"1#(W,$%!,3@S#0I3,3$S
M.$(W-#!",C4V-3-!0D1!-C U0C<Y.4(V0D-!,3 S,C<R0D)%-# -"E,Q,3,X
M0C@T.40X0T1%.3A$0S9#0C%%-D(Q03,P,C(V,3%#1#@S1#)", T*4S$Q,SA"
M.31"-SDY0D4Y1#A#1$4Y.$1#139",4(Q.3DR,# S1#$Y.$0W#0I3,3$S.$)!
M-$4R,C,R0T0V.3A%044W0C$R,#(U0D4Y1$1%.3A$0SA#,44-"E,Q,3,X0D(T
M-D%",44V0C$R0C U1#$Y.$5!,C0Q-$0V.3A%,D4W0C$U. T*4S$Q,SA"0S1!
M,S R,C8P0D-$.#-$,D)%.41$13DX1$,X0T4W0C$S0SDX#0I3,3$S.$)$-$)$
M039&1D(W0D-#0SA!0C0S0T)$039&1D(W0D-#0SA"-#8-"E,Q,3,X0D4T-$5"
M-D)#03$P,#(V1D$S0SE$0C8Y1$$Q,#8R-D4V,T9$10T*4S$Q,SA"1C1".4$V
M,$-#1#DR,S)#0S@Q,35!-C!!0T0Y,3E#038R.#DW#0I3,3$S.$,P-$-$.3(Y
M1D,V1CDP,$$T,#-"-S0P0S9&.3 Q030P,4(W134-"E,Q,3,X0S$T-#%#-D8Y
M,#)!-# Q0C<T,D(V-#!!0C!"0T0Y,3E#0T0S.0T*4S$Q,SA#,C0Y,D(X03$P
M-#(W,49!,3 R,C8P1D$Q,#,R-C R,C!%1C4T#0I3,3$S.$,S-$(V-# T03)!
M,$-!-C R,C P.$(V-# T0T$Q,#,R-C Q1#D-"E,Q,3,X0S0T-$9"-S0P,C!$
M,T(V-#%!0C%#0T0Y,3E#0T0Y,D(X03$W,PT*4S$Q,SA#-30P-#(W,3A!,3 R
M,C8P0D$Q,#,R-C R,C!%1D(V-#$T040Y#0I3,3$S.$,V-#(P,#-"-C0Q-$-!
M-# Q0C<T,3(P1$$Y0C0U1CDP,$-$-3D-"E,Q,3,X0S<T1C P,S-&-#,S1C0T
M,T8T-3-&-#8S1C0W-#5&.3 P0T0U00T*4S$Q,SA#.#1&,# V.4%#0S@Q,34P
M,3 Q,C1#1#@Y0S,R-C(R038P14%&#0I3,3$S.$,Y-$-$.3$Y0T$V,CA#1#DR
M.49!-C!&0T0Y,3E#0T0Y,D(X-# -"E,Q,3,X0T$T03$P,3(W,#9!,3 T,C<P
M0C(P1C-#0SA%-C%#0S@Q.3<V- T*4S$Q,SA#0C1#0S@Q.44Y0C0U1C@P,$-$
M1C P,S0U1C@X,$-$1C P,T%##0I3,3$S.$-#-$$V,3!#1#@Y,#8T-48X,#!#
M1$8P,#9!-C$R0T0X.3 V-S8-"E,Q,3,X0T0T-#5&.# X0T1&,# V038Q1$-$
M.#DP-C0U1C@Q,$-$1C U0@T*4S$Q,SA#130P-CE!-#4P,#-&-D8U,#5!,D%&
M0D$V,3!#1#DQ.4,S1C)"#0I3,3$S.$-&-#E$038S1D-$.#<V0C-&03)!-C Q
M0T0X.3 V0T0X-T5&,#0-"E,Q,3,X1# T,C4P.#1#0C$Y1#(W149#0SA#0C="
M-CE$-#@T.#0X.3=!1 T*4S$Q,SA$,30X0T(V-#!%-S4P0C8T,44W-3%"-C0R
M13<U,D(V-#-%-S4R#0I3,3$S.$0R-#4S0C8T-$4W-31"-C0U13<U-4(V-#9%
M-S4V0C8T-T4W-48-"E,Q,3,X1#,T-3<S0SE$0C8Y1$%"0T%#1#DR,S)"-CE$
M04(S,$-$.3(Q-0T*4S$Q,SA$-#0P0D(V.41!,3 X,C<P-D-#.$-&04-#.$-"
M-T$V0S=#1#1##0I3,3$S.$0U-#DR,S)!-C,R0T0Y,C!"038P-T(W.40S1D$R
M038P,4-$048-"E,Q,3,X1#8T.#DP-D-$.#=%1C(U13-",3E$,C=&,$(W.3E"
M-CE$-$-#1 T*4S$Q,SA$-S1!-# W0C<Y1$(V.3E",3E$,C9$,$%"0T)#1#DR
M,S)!-D%##0I3,3$S.$0X-#)$0T0Y,C!"0C8Y1$$Q,#<R-D0Q038P-T(W.41!
M-D,W130-"E,Q,3,X1#DT0T0Y,C,R038S,T-$.3(P0C-&03)!-C Q0T0X.3 V
M0T0T-@T*4S$Q,SA$030X-T5&,C5!-D(Q.40R-T8P0C<Y.4(V.40T0T$T,#="
M-T,T#0I3,3$S.$1"-#E$0C8Y.4(Q.40R-CDS04)#0D-$.3(S,D(V.41!0C,Q
M.#(-"E,Q,3,X1$,T0T0Y,C!"0C8Y1$$Q,#<R-D-&038W1D-$.#<V0CE"-#4W
M1 T*4S$Q,SA$1#0P,#4P0T0X138T-#5&.#@P0T1&,# V-#4P,#4X0T0X13 T
M#0I3,3$S.$1%-#8T-#5&.#@X0T1&,# V-#4P,#8P0T0X138T-#5&.#DP-44-
M"E,Q,3,X1$8T0T1&,# V-#4P,#8X0T0X138T-#5&.#DX0T1&,# V-#4U1@T*
M4S$Q,SA%,#0P,#<P0T0X138T-#5&.$$P0T1&,# V-#4P,#<X0T0X13<S#0I3
M,3$S.$4Q-#8T-#5&.$$X0T1&,# V-#4P,#@P0T0X138T-#5&.$(P0T0-"E,Q
M,3,X13(T0T1&,# V-#4P,#@X0T0X138T-#5&.$(X0T1&,# V.4$Y.0T*4S$Q
M,SA%,S1!-C$Q0T0Y,3E#0T0Y,D(X03$P-#(V1CE#1#@X145"-D$U#0I3,3$S
M.$4T-$$X0S!&.#(X-#!"-S0P,T8T,3-&-#(S1C0S,T8T-#-&,38-"E,Q,3,X
M134T-#4S1C0V,T8T-SE"-#5&.#(X0T1&,# V.4%#0S@Q,35&0@T*4S$Q,SA%
M-C1&-D(W-#!%-C Q0C<T,44V,#)"-S0R138P,T(W-#-%-C@T#0I3,3$S.$4W
M-# T0C<T-$4V,#5"-S0U138P-D(W-#9%-C W0C<T-S@Q048-"E,Q,3,X13@T
```

M0S9&.3 P03$P,C(V,#-#0SDP,T4T1#(V,#9"-C@X03$U1 T*4S$Q,SA%.30S
M0C(V-3%!-C Q0C="14$V-49"-S4P0C9",D(W.3$S1C Q#0I3,3$S.$5!-#DP
M0T0Y,D4P0C8X1$(W-3%"-CA%0C<U,D(V0C-"-SDQ03(-"E,Q,3,X14(T,T8Y
M,$-$.3)%,$(V.$1"-S4S0C8X14(W-31"-D(T0C=$1@T*4S$Q,SA%0S0Y,3-&
M.3!#1#DR13!"-CA$0C<U-4(V.$5"-S4V0C9"-48P#0I3,3$S.$5$-$(W.3$S
M1CDP0T0Y,D4P0C8X1$(W-3="-CA%0C<U.#-&-3$-"E,Q,3,X144T-3E#1#DP
M,C4X,4,V1CDP,$$Q,#(R-C S0T,Y,$,Y-$0R,0T*4S$Q,SA%1C0R-C!"0C8X
M.$$Q,T(R-C!"0T0X1C-#,C P,T-$.$9!-S,P#0I3,3$S.$8P-$-$.3 R-3@Q
M038T,$(W,3-!-C!#0C<Q-$$V,#!"-S$U0C<-"E,Q,3,X1C$T0S9&.3 P,C<P
M0T$Q,#$R-S T038S-#(P,#9!-C,R,C Y,@T*4S$Q,SA&,C0P,D$V,S-"-S$Y
M.#%&-C(W,#E"-S$X,$0Q-D9$048P,30X#0I3,3$S.$8S-#(P1C1!-C U0T0Y
M,CE&.#%!-C Q0C="14$V-C-"-S4P0D8-"E,Q,3,X1C0T0T0X.#4W0C8X0T(W
M-3%"-CA$0C<U,D(V.$5"-S4S039%,PT*4S$Q,SA&-30W,T(W-31#1#@V1#A!
M-C,P0C<U-4(V.$1"-S4V0C8X145!#0I3,3$S.$8V-$(W-3=!-C8W0C<U.$(V
M-S9"-SA!0C8W-T(W.$)#1#@V03 -"E,Q,3,X1C<T03E!-C,P0C<U.4(V.$1"
M-S5!0C8X14(W-4)!-C<T0C=$1@T*4S$Q,SA&.#0U0T-$.#5#0D(V.$-"-S5$
M0C8X1$(W-45"-CA%0C<U1C4X#0I3,3$S.$8Y-$$V-C5"-S8P038S,4(W-C%!
M-C<W0C<V,D$V,$1"-S8S0C4-"E,Q,3,X1D$T,T8V-#@Q038P,4(W0D5!-C8S
M0C<U,$-$.3 Q0S!%0T(Q-PT*4S$Q,SA&0C0P-4$V,#)#1#@X,S9"-CA#0C<U
M,4(V.$1"-S4R0C8X13DW#0I3,3$S.$9#-$(W-3-!-C<S0C<U-$-$.3 Q0T(V
M0T%!-$,P,C8P0D(V,C<-"E,Q,3,X1D0T039"-SA!0C9!-T(W.$)#1#@V03E"
M-CA#0C<U-4(V.$0W-@T*4S$Q,SA&131"-S4V0C8X14(W-3=!-C<T0C<U.$-$
M.3 Q0S!%0SDP.3DX#0I3,3$S.$9&-$(V03-!,#9%0C<X04-$.#4Y-$(V.$-"
M-S4Y0C8X1$(W.$8-"E,Q,3,Y,# T-4%"-CA%0C<U0D$V-C5"-S5#038S,4(W
M-41!-C<W0C=#0@T*4S$Q,SDP,30U14$V,$1"-S5&,T8V,#@Q038R1$(W.$-"
M-SA$0C<X138R#0I3,3$S.3 R-#@Q-D4U,$-%,4,Q-#@Q.$(X0T)%,39"14-%
M1C8R-C T13,-"E,Q,3,Y,#,T,40Q-#(P,#0W13$X0D9#13A!.#!!-C(Q0C<U
M,$(W-3%$, T*4S$Q,SDP-#1!-C)$.$-!13$S13<U,C5!,D%&0D(V0T%!-$,P
M,C8R.3!$#0I3,3$S.3 U-$(V039"-SDP0C9!-T(W.3%!-D1"0C<Y,D-$.3$S
M-C,X,D$-"E,Q,3,Y,#8T.30S.3DS,SDY-3,X.30S.3DS,SDY-4(V.3-"-SDT
M0C8Q00T*4S$Q,SDP-S0Y-4(W.3,T-3 P-3)#1#DQ-$4P14-",3-!-C,P0C<U
M-D8W#0I3,3$S.3 X-$(W-3="-S4Y0C9!.$$T,$8Y-SA#1#8Y,3A#0C<U.#!%
M-S8-"E,Q,3,Y,#DT0SDR1$(V03-!,#9%,D$P,30P044P.30R0D8Y,T(W.30V
M00T*4S$Q,SDP031"-D$S03 V13)!,#<S,#DT-$9",CDS0C<Y,T(V.31!0C@Y
M#0I3,3$S.3!"-#0P0C<Y-$(V.3-!.3 Q0C<Y,S0U,# U04-$.3$T13-&-38-
M"E,Q,3,Y,$,T-C)#1#DP,C4X,4$V,D0X0T%%,3=%-S4P-4$R049",T8Q00T*
M4S$Q,SDP1#0Y,S-&.30V13 Q.35"-CDU0C%",C(W,3$Y-SA#1#8Y.$$W#0I3
M,3$S.3!%-$0P0D(Y-$(W.30S0SDU,C1%1#-#.3,R,$4Y0C9",4$T-#D-"E,Q
M,3,Y,$8T,#,R-C!#0C9",D$Q,#,R-3 V,T,Y-#(T,#(S0SDS0C8X,0T*4S$Q
M,SDQ,#1",T)".31"-SDT,C0P,C-#.3,T-3 P-C!#1#DQ-$5"-C!%#0I3,3$S
M.3$Q-$(T044S0S0R0D8Y,T)"0C5"-SDT,C0P,C-#.3,T-3 P,C -"E,Q,3,Y
M,3(T-C1#1#DQ-$5!-C!$0C<V.$$V,$%"-S8Y,T8V04-$.3 W1@T*4S$Q,SDQ
M,S0R-3@Q0C8Y,D)%.3$T,D(W.31"1CDS0C8Y,D)%.3 T,C,S#0I3,3$S.3$T
M-$)".3-"-SDS.49!.3 P0C<Y-3@Q.#DX0D(V.3,V,D$T,#<-"E,Q,3,Y,34T
M,$8X0SDW1#8Y,3A#.$$X.$8W.#DX0D(V.3-!-#!&.$,S1 T*4S$Q,SDQ-C0Y
M-T0V.3$X0SA!.#A%-S Q.#DX0D(V.30V,D$T,$8X0S<T#0I3,3$S.3$W-#DW
M1#8Y,3A#.$$X.$4W,#(X.3A"0C8Y-$$T,$8X0SDW,D4-"E,Q,3,Y,3@T1#8Y
M,3A#.$$X.$4W,#,X,3,P,S$S,C,S,S0S-3,V,S=#0@T*4S$Q,SDQ.30S.#,Y
M-#$T,C0S-#0T-30V044R.#0R04(R-T(W.3<Y1D5!#0I3,3$S.3%!-$$Y.3-"
M-SDV038P,4-$.3(S,D$V.#!#1#DR,S)!1#,Q-C$-"E,Q,3,Y,4(T039#,$-$
M.3(S,D%$,D$X,4%%,#DT,D%"0C="-SDW.48Q, T*4S$Q,SDQ0S1!.3DX0C<Y
M-C4U.39&-D%&,#$S-3DV0T0Y,C,R038P.#9%#0I3,3$S.3%$-$(W.40U-3DV
M1C9!1C Q,S4Y-D-$.3(P0C-!.40R-D8R-T4-"E,Q,3,Y,44T.#%!-C$T0C<Y
M.#4U.39&-D%&,#$S-3DV040Q.3-!.3A&.0T*4S$Q,SDQ1C0R-D8S.#%"-C4P
M040S-S0U,# U,48V,C<P.4)&.4%!1#(Q#0I3,3$S.3(P-# V0D4Y035#,C!&
M-#@Q040V-3DW0C8P-$%!1D5"-S T-#$-"E,Q,3,Y,C$T.49!-$8P04$P,D(W
M,# Y1#$V,# V,C8R,3<P,#E&-C(R,0T*4S$Q,SDR,C1!-$8P04$P,D(W,# Y
M1#$V,# V,C8R,3<P,#@Q040S130U#0I3,3$S.3(S-#DW0C8P-$%!1D5"-S T
M.49!-$8P04$P,$(W,# Y1#$V,D(-"E,Q,3,Y,C0T,# V,C8R,3<P,#E&-C)!
M-$8P04$P,$(W,# Y1#$V,# Y,@T*4S$Q,SDR-30V,C8R,3<P,#@Q.3="-C T
M04%&14(W,#1!-$8P04$P,$(X#0I3,3$S.3(V-$(W,# Q-C P-C(V,C$W,#!!
M-C U0T0Y,D%!.#%"-SDY0SD-"E,Q,3,Y,C<T,T8Y0D(V,#1!-#!&04$P14(W
M,#1!-C T0C<P,#$V,#!"-0T*4S$Q,SDR.#0V,C8R0C8P,#$W,# Q-C P-C(V
M,C$W,#!!-#@P,C9%,#)!#0I3,3$S.3(Y-$(V.4(R-C T,T,Y0C(P1$%"-CDY
M.#%"-SE#038V-$%$03 -"E,Q,3,Y,D$T,#4S03E#,C9&.#@Q-48X0T%&,#$V
M-3 S13@R-D8Y-$%%. T*4S$Q,SDR0C0R-D8T.$,X,4(V0D,R-D9#0C9"0S(W
M1D,X,4$V,3!"-S8X#0I3,3$S.3)#-#DY-$8S.#DQ,SDY,#0Y0C$Y,C(U,#)"
M,#DR,SDY-#,Y,C$-"E,Q,3,Y,D0T.3,S03DY,C9%1#,S.3,S,SDT0C<Y-3@Q
M038S,$(W.$,Y00T*4S$Q,SDR131"-SA$0C<X14(V.3 R-C V0C8Y,4$Q-C0R
M-3!%0C8Y,4(U#0I3,3$S.3)&-$$P-C1"-SDQ,C0P,C-!.3 S0SA#,C!%.$$Q
M,$$R-3 V.#0-"E,Q,3,Y,S T03 P03-#.$0R,$8V04(S,$(W.$4S1$)%,C8Q
M-$(V.$,S-0T*4S$Q,SDS,31!,3,P,C8P14$V,C!"-SA#0C8X1$$Q,S R-C T
M038R,#,S#0I3,3$S.3,R-$(W.$0X,3(P,C U-S8Y-D,V0S(P-C$V138T,C U
M,C<U-44-"E,Q,3,Y,S,T-S,W,S(W-S,R,#(P,C R,#(P-#$U,#4R-3,R,#4W
M-SA%, T*4S$Q,SDS-#0R,#4S-S0V,3<T-CDV1C9%,C R,#(P,C R.#8S,CDR
M,$)&#0I3,3$S.3,U-#0S-D8W,#<Y-S(V.38W-C@W-#(P,S(S,#,P,S R,#(P
M,D$-"E,Q,3,Y,S8T,C T,S1$-#DR,#4P-S(V1C8T-S4V,S<T-CDV1C9%-S,T
M,@T*4S$Q,SDS-S0R13(P,C R,#(P,C R,#0Y-D4R,#9$-C4V1#9&-S(W.3@W
M#0I3,3$S.3,X-#(P-D8V-C-!,C R,#(P-#0W,C)%,C T1#9&-S(V-S8Q-$,-

```
M"E,Q,3,Y,SDT-D4R,#,Q,SDS,C,S,D0S,3,Y,SDS.30U-S(W,C9&-S(U-0T*
M4S$Q,SDS030R,#<R-C4V,38T-CDV138W,C S,3)$-S<V.3<R-C4V-#(R#0I3
M,3$S.3-"-#8Q-S0V,3(Q,C R,#(P,C R,#(P,C R,#(P,C R,#(P0T4-"E,Q
M,3,Y,T,T,C R,#(P-30V-39$-S R,#)$,D0R1# P-#8R,#1#,D0Q.0T*4S$Q
M,SDS1#0R1#)$,C T.#)$,D0R1#4W-CDV138T,C R1#)$,D0P,# S#0I3,3$S
M.3-%-#(P,D0R1#1$-3 T.#(P-#<R,#)$,D0T-#8Y-S,W,#9#,SD-"E,Q,3,Y
M,T8T-C$W.3(P-#,W-3<R-S(V-39%-S0R,#0T-C$W-#8Q,C!#10T*4S$Q,SDT
M,#0R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#4T#0I3,3$S.30Q
M-#(P,C R,#4S-C4W-#(P-4$W-39#-S4R,#0T-C$W-#8U-$$-"E,Q,3,Y-#(T
M,D8U-#8Y-D0V-3(P,C R,#(P,C R,#(P,C R,#(P,C Q-@T*4S$Q,SDT,S0R
M,#(P,C R,#(P,C R,#(P,C R,#(P-34T,34R-30R1C4Y#0I3,3$S.30T-#0T
M-CDW,S<P-D,V,3<Y,C V1C<P-S0V.39&-D4W,S(P1C(-"E,Q,3,Y-#4T,C R
M,#(P,C R,#(P,C R,#(P,C R,#(P,C P- T*4S$Q,SDT-C0R,#(P
M,C U,S8U-D4W,S9&-S(R,#4S-C4W-#<U-S R,$,Y#0I3,3$S.30W-#(P,C R
M,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P130-"E,Q,3,Y-#@T,C R,#(P
M,C R,#(P,C R,#(P,C R,#4S-C4W-#-!,C!%10T*4S$Q,SDT.30R,#<X-S@R
M1C<X-S@R1C<X-S@R,#<X-S@S03<X-S@R.#$T#0I3,3$S.31!-#<S-C4V0S8U
M-C,W-#-$-D4V-3<X-S0R.3(P,C R,#(P.$8-"E,Q,3,Y-$(T,C R,#(P-#8V
M1C<R,C W,S8U-D,V-38S-S0V.39&-D4S-PT*4S$Q,SDT0S0W,S-!,C R,#(P
M,C R,#4U,D8T-#-$-C,V.#8Q-D4V-S0Q#0I3,3$S.31$-#8U,D,R,#<S-C4V
M0S-$-D4V-3<X-S0U,S8U-D,V-38S03<-"E,Q,3,Y-$4T-S0R,#0Y-D4W-#8U
M-S(V-C8Q-C,V-3-!,C R,#(P,S4X, T*4S$Q,SDT1C0R1#9$-CDV13(P-C$W
M-C8U-S(V,38W-C4V-#(P,C@U-$8X#0I3,3$S.34P-#1%-#,R.34S-C4V0S8U
M-C,W-#(P-#DV13<T-C4W,C8V0C$-"E,Q,3,Y-3$T-C$V,S8U,T$R,#(P,C S
M-3)$-S,V-38S,C V0S8Y-S8W. T*4S$Q,SDU,C0V-3(P,C@T,S9&-D0W,#<U
M-S0V-3<R-3,V-39#-C4V,S1"#0I3,3$S.34S-#<T,C T.39%-S0V-3<R-C8V
M,38S-C4S03(P,C R,#,U,D8-"E,Q,3,Y-30T,D0W,S8U-C,R,#9#-CDW-C8U
M,C R.#4P-C4V-3<T,CE$0PT*4S$Q,SDU-30R,#(P,C U-S0Q-3(T130Y-$4T
M-S(Q,C T1#<U-S,W-$$S#0I3,3$S.34V-#(P-C@V,3<V-C4R,#(P-S,V-39%
M-S,V1C<R,C V,38S-S$-"E,Q,3,Y-3<T-C,V-3<S-S,R,#(X-S<V,38Y-S0R
M.31&-$(R,#<T-D8W,@T*4S$Q,SDU.#0R,#0S-D8V13<T-CDV13<U-C4S1C(P
M,C R,#(P,C U,S-##0I3,3$S.34Y-#8U-D,V-38S-S0S1#8W-D8R0S(P-$0V
M-39%-S4S1#8U,C -"E,Q,3,Y-4$T-S@V.3<T-3(V1C<T-C$W-#8U,C T,S9#
M-D8V,S9"-S<V0PT*4S$Q,SDU0C0V.3<S-C4R,#(P,C R,#<S-D,V1C<W-D,W
M.3(P,S$R1D(X#0I3,3$S.35#-#,S,C R1#)$,D0R1#)$,D0R1#)$,C U,#9&
M-CDV13<T044-"E,Q,3,Y-40T,C W-#9&,C U-#<R-S4V-3(P-$4V1C<R-S0V
M.#(P-S0P,0T*4S$Q,SDU130V.#8U-D4R,#<P-S(V-3<S-S,R,#4S-C4V0S8U
M-C,W-#9"#0I3,3$S.35&-#(P,C R,#4S-C4V13<S-D8W,C(P-3,V-3<T-S4W
M,#(P,S@-"E,Q,3,Y-C T,C R,#(P,C R,#(P,C V,S9&-D0W,#9#-C4W-#8U
M,C!&.0T*4S$Q,SDV,30R,#(P,C R,#(P,C@W-S8Q-CDW-#(Y-$8V138U,C V
M1$5$#0I3,3$S.38R-#9&-D0V-39%-S0R,#<P-D,V-38Q-S,V-3)%,D4R13(X
M0S,-"E,Q,3,Y-C,T-38V-3<R-S,V.39&-D4R,#,Q,D4S,#,W,D4S,34R,CDW
M0PT*4S$Q,SDV-#0R,#(P,C U,S8U-S0R,#1#-D8V,S8Q-D,R,#8X-D8W-3!&
M#0I3,3$S.38U-#<R,C W.#<X,C R,#(P,C@U,S8U-D,V-38S-S0S1#8T1C<-
M"E,Q,3,Y-C8T-D8V138U,CDR,#(P,C R,#(P,C R,#9$-D0R1C8T-C1$-@T*
M4S$Q,SDV-S0R1C<Y-SDR,#8X-C@S039$-D0U03(P-C@V.#1#,C U,T(T#0I3
M,3$S.38X-#8Q-D0W,#9#-C4R,#<X-S@R1C,V,S R,#(P,C R,#(P-T4-"E,Q
M,3,Y-CDT,C R,#(P-30V1C8T-C$W.3(P-#<W-3<S-S0R,#<X-S@X10T*4S$Q
M,SDV030T1#4P-#@R,#(P,C R,#4Y-C4W,S<T,C T.#)$,D0R1$(Y#0I3,3$S
M.39"-# P,C T0S)$,D0R1# P,C T-S<X-S@U,S8U-D,V-38S-D,-"E,Q,3,Y
M-D,T-S0R,#4U-D4V.3<T-S,S03(P,C R,#(P,C R,#(P-#4X0PT*4S$Q,SDV
M1#0V138W-D,V.3<S-C@R,#(P,C R,#(P,C R,#(P,C R,$)$#0I3,3$S.39%
M-#(P,C R,#4S-C4V0S8U-C,W-#(P-34V138Y-S0W,S-!-#4-"E,Q,3,Y-D8T
M,C R,#(P,C R,#(P,C T1#8U-S0W,C8Y-C,R,#(P,C!"10T*4S$Q,SDW,#0R
M,#(P,C R,#(P,C R,#(P,C R,#(P-3,V-3<T-S0V.44X#0I3,3$S.3<Q-#9%
M-C<R,#<U-S R,#4T-$4T,S)%,D4R13(P,C R,#(P-3@-"E,Q,3,Y-S(T,C R
M,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C S,0T*4S$Q,SDW,S0R,#(P
M,C S,3)$-3<V.3<R-C4R,#0R-S4W,S(P-#4W,D%"#0I3,3$S.3<T-#<R-D8W
M,C(Q,C R,#(P-#(W-3<S,C W,S8X-D8W,C<T0S,-"E,Q,3,Y-S4T-C4V-#(P
M-S0V1C(P-#<T130T,C R,#,Q,D0U-S8Y-S(V0PT*4S$Q,SDW-C0V-3(P-#(W
M-3<S,C T-3<R-S(V1C<R,C$R,#(P,C T130Y#0I3,3$S.3<W-#9&,C T-#8U
M-S8V.38S-C4W,S(P-S(V-3<S-S V1C9%1#@-"E,Q,3,Y-S@T-C0R13(P-3<V
M.39%-C0R,#0T-CDW,C8U-C,W-#8Y-D8S00T*4S$Q,SDW.30V13(P-S0V-3<X
M-S0S031%-S4V1#8U-S(V.38S,C V-$1$#0I3,3$S.3=!-#8U-C<W,C8U-C4W
M,S(P,C R,#(P,C U-S8Y-D4V-#(P130-"E,Q,3,Y-T(T-#0V.3<R-C4V,S<T
M-CDV1C9%,C W-#8U-S@W-#-!-#,Y10T*4S$Q,SDW0S0V1C9$-S V,3<S-S,R
M,#(X-#4R0S(P-$4R0S(P-C4W-$(R#0I3,3$S.3=$-#8S,D4R.31%-D8R,#0Y
M-#0W,S(P-S W,C9&-C<W,C8Q,T8-"E,Q,3,Y-T4T-D0V1#8U-C0R13(P,C U
M,#9#-C4V,3<S-C4R,#<R-S5&1@T*4S$Q,SDW1C0V13(P-3,T-34T-34U,#)%
M,C R,#(P-#0T-30R-34T-S1$#0I3,3$S.3@P-#-!,C U-#8U-D0W,#-!,C W
M.#<X-S@R,#(P,C R,#<W03<-"E,Q,3,Y.#$T-S,W,#8T,C W.#<X-S@R,#<W
M-C0V.3<R,C W.#<X-S@Q,PT*4S$Q,SDX,C0R,#(P,C R,#(P,S R,#,R,S,R
M,#,T,S4R,#,V,S@R,$$T#0I3,3$S.3@S-#,Y,S S,3,Q,S,S,3,S,S4S,3,U
M,S@S,3,X,S S,C,P1C -"E,Q,3,Y.#0T,S,S,C,R,S4S,C,T,S@S,C,W,S S
M,C,Y,S,S,S,Q,S5$-@T*4S$Q,SDX-30S,S,S,S@R,#(P-$4T131%-#4R,#1%
M-#4T-31%-#4R,#0X#0I3,3$S.3@V-#(P-#4T-34S-#4R,#4S-#4U,S4S-#4R
M,#(P-3,U,S4S1#(-"E,Q,3,Y.#<T-3<R,#4S-3<U,S4S-3<R,#(P-3<U-S1%
M-3<R,#1%-3<V00T*4S$Q,SDX.#0T131%-3<S,#,P,S S,#,R,S,S,#,T,S4S
M,#,V,S@S,#4Q#0I3,3$S.3@Y-#,Y,S S,3,Q,S,S,3,S,S4S,3,U,S@S,3,X
```

```
M,S S,C,P.3 -"E,Q,3,Y.$$T,S,S,C,R,S4S,C,T,S@S,C,W,S S,C,Y,S,S
M,S,Q,S4W-@T*4S$Q,SDX0C0S,S,S,S@T,#!#,3(Q,C!#,# P,# P,# P,# P
M,# P,#@V#0I3,3$S.3A#-# P,# P,# Q,# P,# P,#0P,# S,#(P,#%&,4,Q
M1C%%,$4-"E,Q,3,Y.$0T,48Q13%&,48Q13%&,44Q1C Q,#(P,# S,#0P-S8S
M,$,P0@T*4S$Q,SDX130Q1C$W,T(P,# P,3<P,# Q,#$P,# P,# P,# P.#<X
M040U#0I3,3$S.3A&-#A$.3 Y,SDP,# U14)#13(V,3-&1$0X,T,R.4,W13(P
M,C@-"E,Q,3,Y.3 T03-&1#%&-#$Y1$,S,C$W1D9#03(T,#%%-48P,44S0D0U
M,PT*4S$Q,SDY,30S138P.#)$0S(S-T0Y1D,Q-#(Q0T9%03!%,4)&-40P,S0W
M#0I3,3$S.3DR-#@P1$4S0S8R0D5%,# R-4-$1C@Q-C,S1#=#,C)#,#E%,T(-
M"E,Q,3,Y.3,T,40T,T$Q1D8T-C$X1D%!-#(W-SDY0D,U.#1$03,X-C8R-PT*
M4S$Q,SDY-#1%-4)"-3DP-T1".#4V-S,Y0D%%-# V-3@Q.30W035&0C$S#0I3
M,3$S.3DU-#<X,C9#-#E!-C4S0D0Y.#<P-#5!0CA%-D$W1CDQ0C0U,#<-"E,Q
M,3,Y.38T0S8Y.#=!,C1&.$$V-#0Q03DY0S<R-3=",T$V-#@V1#A&0@T*4S$Q
M,SDY-S0U0C U13=".3A#1#(S,#9%141",S4Q,$8T13$P1C)!0T4W#0I3,3$S
M.3DX-#)&-S$Y,T-$,3$T1D%$1C,W,#)%0T,Y,D0S.$0V1C,Q1#,-"E,Q,3,Y
M.3DT0C)%0S!%-3!!1D8Q,3,T1$-%.3 W,C)#-D0S,T0Q.$9#-PT*4S$Q,SDY
M030P0S4R0C!%13,R-D,X140P-3,P1$5&0C%&,$%%-$,Q,D)"#0I3,3$S.3E"
M-#DQ0T8R1#<S0T$Y-#<V,CA!0D8U,3<T.3 X-39"-$5!03<-"E,Q,3,Y.4,T
M-CDS-T0U.$(U-S Y14)"-3,V-C@X040T.35#0C(Y-S<Y,PT*4S$Q,SDY1#1&
M-$%!-#@Q-D4Y0C<U-3!".#A$-C,T-D$R0C<U.3=#.3@W#0I3,3$S.3E%-#1!
M,31&-D$X-S0R04,X.38Q-31"03E&-T(V13@P034T-T(-"E,Q,3,Y.48T1#<X
M.39",S4P1# P,#,P,#8U-C,V.#9&,C V1C8V-C8U-0T*4S$Q,SE!,#0P1# P
M-D0V1C9%-CDW-#9&-S(R,#9&-C8V-C!$,# V,S9%#0I3,3$S.4$Q-#9&-D4W
M-C8U-S(W,S!$,# U-S<X,C U,S<T-C$W,C<T.3<-"E,Q,3(Y03(T,C R.#,Q
H,D4S,#,W,D4S,34R,CDR13)%,D4P1# P0C -"E,Y,#,P,# P1D,-"C R
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

22. [wxsig] Sensors and LCDs

```
From: William Beals <wmbeals@compuserve.com>
Date: Sat, 18 Mar 2000 10:56:27 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71902-2000.03.18-11.51.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Russ:

Cool on the DS18S20's! Looks like they may have gotten it right!

It is only by bizzare circumstance that the unit works without the LCD plugged in, but it will. To keep the debug modes straignt on the 6808 I need a pulldown resistor on Port A, bit 7. That happens to be the active high busy-bit when polling the LCD to see if I can send the next character to it. Since it is pulled down, I am guaranteed to get an un-busy LCD even if it isn't plugged in. You got lucky!

Once we get to multiple groups of sensors I plan on seperately accessible setup routines for each. I'll treat the current sensor as a "unit", then add seperate access for setup routines for rain sensors, etc.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Why Peet?

```
From: William Beals <wmbeals@compuserve.com>
Date: Sat, 18 Mar 2000 10:56:49 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71903-2000.03.18-11.51.48--lyris.wxsig#tapr.org@lists.tapr.org>
```

Rendered body type: text/plain

Brain:

I emulate the Peet format because there is lots of APRS software out there
that knows how to deal with that format. Alas NONE of them can deal with
the APRS format yet, so I had to pick something.

will
BTW: I get two copies of your responses, so I think you are replying to
"all" instead of just the sender (which is the reflector)

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] New temp sensor outside

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 18 Mar 2000 17:36:39 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71952-2000.03.18-18.35.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have mounted the new 1-Wire temperature sensor (DS18S20) outside in a
ventilated enclosure. It had worked fine inside while being driven
through a 5 foot cable without using the +5V terminal on the sensor,
i.e. letting it use parasitic power for the conversions. However, after
hooking it up through a 150 foot cable, the T238 was indicating lots of
errors from the temperature sensor. The T238 displays the accumulated
number of errors for each sensor since start-up. In less than 10
minutes I had 17 errors. With the old sensor in the same location, I
wouldn't get 17 errors in a week.

Then I hooked up the +5V to the optional +5 terminal of the DS18S20. It
has been running for over an hour without any errors. What is probably
happening is the timing that Will referred to is just marginal with the
long cable and parasitic power. However, the +5V must be enough to
speed up the conversions so that the original timing built into the T238
is satisfactory for this particular temperature sensor.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] Re: Why Peet?

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sat, 18 Mar 2000 23:28:05 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-71983-2000.03.18-22.27.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/18/00 12:56 PM, William Beals at wmbeals@compuserve.com wrote:

> Brain:
>
> I emulate the Peet format because there is lots of APRS software out there
> that knows how to deal with that format. Alas NONE of them can deal with
> the APRS format yet, so I had to pick something.

 uh ... now I am confused, NONE of what can deal with APRS format? NONE of
the APRS programs can handle APRS format?????

```
  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys  <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

26. [wxsig] Re: Why Peet?

```
From: Steve Dimse <sdimse@netrox.net>
Date: Sun, 19 Mar 2000 05:57:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72023-2000.03.19-04.56.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
On 3/18/00 11:28 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:

>> I emulate the Peet format because there is lots of APRS software out there
>> that knows how to deal with that format.  Alas NONE of them can deal with
>> the APRS format yet, so I had to pick something.
>
> uh ... now I am confused, NONE of what can deal with APRS format? NONE of
>the APRS programs can handle APRS format?????
>
Actually, what he is saying is true, as bizarre as it sounds at first
glance. None of the APRS programs expect a local weather station to send
data to it in APRS format. They are all set up to use various commercial
weather stations. Of these, the Peet format is the most versatile, it is
the only one you can uise as a stand-alone weather station as well as
with a computer/APRS client. There is also other software logging
programs you can use that have nothing to do with APRS that use the Peet
format...

Steve K4HG

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

27. [wxsig] Kantronics KCP-3+/Kam-98 with ver 8.3 firmware - Second/GPS Port Docs (fm Kantronics website)

```
From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 19 Mar 2000 11:03:04 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72057-2000.03.19-10.02.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
I thought I would send this along for help about formats et al. I really
think it looks promising to be able to get it to work with the 3+ and its
second port. its just a matter of tweaking some of the parameters. If data
latency is a problem, how much of a problem is it to send the data once
every two or three mins instead of once every five mins?

-----


<h1 align="center"><!--mstheme--><font face="trebuchet ms, arial, helvetica"
color="#CC9933"></font><font SIZE="5"><a name="Using A Second Serial Port in
the KPC-3 Plus for GPS/APRS*">Using A Second Serial
Port in the KPC-3 Plus for GPS/APRS*</a><!--mstheme--></font></h1>

<p></font><font size="4">Phil Anderson, W0XI</font></b></p>

<p><strong><small>A second serial port, configured in firmware, has been
added to the
KPC-3 Plus with firmware update 8.3. At present, this feature is included
only in the
firmware for the KPC-3 Plus and the KAM<font FACE="WP
TypographicSymbols">=</font>98
HF/VHF modem scheduled for release later this month. This second read-only
port accepts
```

NMEA strings from most GPS portables and frees up the KPC-3 Plus RS-232 standard serial
port for connection to a laptop. This configuration eliminates the need for a special
cable, such as the Kantronics HSP, to accommodate the sharing of the KPC-3 Plus serial
port between a GPS device and a computer. </small>

<small>With this second port, the KPC-3 Plus can be configured as part of a GPS
tracker--GPS device, TNC, and transceiver--and at the same time accommodate automatically
the attachment of a computer for sending/receiving packet data. For example, the KPC-3
Plus with GPS device attached to the second serial port will allow a program such as APRS
to take control of transmitting fix locations via UI frames. This may be handy when a
driver wishes to add his computer to a tracker already operating in his vehicle. </small>

<small>When the second serial port is activated, using the GPSPORT command, the
NMEA data input must be cabled to the radio port of the modem, rather than the RS-232
serial port. Since this pin is normally used for external carrier detect, carrier detect
must not be configured as EXTERNAL (using the CD command). Software carrier detect is
preferred since it allows for continuous open squelch operation and for the reception of
weak signals (by opening the squelch completely). </small>

<small>Wiring to the radio port is straightforward; you must simply attach the
two wires coming from the GPS device to the radio port cable connector. Wire the NMEA+
wire to pin 2 and the NMEA- wire to pin 6, ground (of the DB-9 connector). In effect, you
create a AY@
cable coming from the TNC, one portion going to the GPS data input jack and the other leg
going to the radio as before. </small>

<small>The KPC-3 Plus is configured for GPS tracker operation in the normal
manner, as outlined the Modes of Operation section of the User=s Guide. When using the second port for attachment of
the GPS device, the only setup changes required are to turn on and configure this port,
using the GPSPORT command. The GPSPORT command allows you to configure a baud rate of 300,
600, 1200, 2400, or 4800 for the GPS device, use normal or inverted data, and use or not
use checksums sent by some NMEA strings. If GPSPORT is set to a baud rate of
A0,@ then
the port is disabled. </small>

<small>Example: Setting up a tracker using the Magellan Meridian
XL GPS unit and the 8.3 KPC-3 Plus</small>

<small>I set up the modem parameters for GPS operation in the usual manner:</small>

<small>GPSHEAD 1 $GPRMC</small>

<small>LTP 1 GPS VIA RELAY, WIDE</small>

<small>(Check with your local GPS group for the preferred beacon path)</small>

<small>BLT 1 EVERY 00:10:00 CLEAR</small>

<small>LTRACK 5 LT1 TIME</small>

<small>GPSTIME VALID RMC</small>

<small>MONITOR ON</small>

<small>I then configured the GPSPORT for 4800 baud operation,
normal signaling,
and to check data input using checksums:</small>

<small>GPSPORT 4800 NORMAL CHECKSUM</small>

<small>These commands completed the configuration of the KPC-3
Plus as a
tracker with the GPS device attached to the radio port<font FACE="WP
TypographicSymbols">=s
input-only serial port. Note that I DID NOT have to change the interface
command (INTface)
to GPS since the GPS device is not attached to the RS-232 port in this
tracker
configuration. </small>

<small>Notes on my particular GPS device: The Magellan Meridian
XL</small>

<small>As with many recent GPS devices, mine supports a choice of
several
serial baud rates and sets of NMEA 0183 compatible strings of fix data.
Pressing SETUP on
the front panel allows me to cursor through various parameter lists to
select from. </small>

<small>Baud rates available are 1200, 4800, and 9600. Since the
firmware serial
port in the KPC-3 Plus supports a maximum rate of 4800, I selected 4800. I
have also used
the 1200 setting. Selection for you will vary depending upon the
capabilities of your GPS
device. Select the lowest baud rate compatible with your application.
</small>

<small>I decided to use the NMEA <font FACE="WP
TypographicSymbols">ARMC@
string instead of the more usual <font FACE="WP
TypographicSymbols">AGGA@
string
because my Meridian does not support checksums in the GGA string, only the
RMC string. I
selected RMC by cursoring down on the SETUP MENU until I got the NMEA and
then selected
NMEA2 which included the RMC string but not the GGA string. Selection
procedure for NMEA
strings for your </small>

<small>GPS device may vary, and could include sending commands to
the GPS
device. If this is the case and you want to use the firmware (second) serial
port of the
KPC-3 Plus, you=ll have to
configure the GPS
device first with your computer or via the KPC-3 Plus RS-232 port and then
reconfigure the
modem for GPSPORT operation (see the RPRINT command in the User=s Guide).</small>

<small>Operation: with a computer attached to the KPC-3 Plus
serial port</small>

<small>With my tracker set up and running - Magellan feeding the
firmware port
of the KPC-3 Plus - with a computer attached to the RS-232 serial port of
the KPC-3 Plus,
with a basic terminal program running, and with the packet MONITOR command
and monitor
transmission command (MXMIT) command on, beaconed RMC strings looked like
this:</small>

<small>W0XI>GPS: <UI>:</small>

<small>$GPRMC,
200257,A,3858.07,N,09518.09,W,00.0,000.0,040798,04,E*5D.</small></p
>

<small>Time and data accuracy: </small>

<small>Finally, data and time accuracy for GPS tracker operations
are improved
with firmware 8.3 for the KPC-3 Plus. You have the options of clearing the
location text
buffers after each beacon, verifying that each NMEA (fix) string is correct
before its
contents are used, and verifying that the time in a NMEA string is valid
before using that
time to update the modem=s clock.
</small>

<small>When the optional CLEAR parameter is used with the beacon
location text
(BLT) command, the location test buffers are cleared after each beacon. This
ensures that
a NMEA string placed in the buffer is not beaconed (transmitted) more than
once. If the
optional CHECKSUM parameter is specified with the GPSPORT command, only
strings with a
valid checksum will be placed in the location text buffers for beaconing.
</small>

<small>If the optional VALID parameter is used with the GPSTIME
command, time
acquired from a GPS string will be used to update the KAM<font FACE="WP
TypographicSymbols">=98 clock only if the string<font FACE="WP
TypographicSymbols">=s VALID bit is on. This ensures that the
modem=s software clock is accurate
for applications such as
slotting (timing) beacons </small>

<small>(C) Copyright 1998 by Kantronics Co., Inc, All Rights
Reserved.</small>

<small>* APRS is a trademark of Bob Bruninga, WA4APR. APRS, A
Packet Reporting
System, is a DOS-based program that displays call signs on maps based on
packets received
from packet radio stations using a GPS device. </small>

<small>

 73 de brian, <mailto:ka2bqe@amsat.org>
--
  Brian B. Riley, KA2BQE
  APRS WideN-N Digi KA2BQE-3
    =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
 <http://members.macconnect.com/~brianbr>
 <http://www.wulfden.org>
 For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

28. [wxsig] Re: Why Peet?

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 19 Mar 2000 11:20:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72068-2000.03.19-10.20.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/19/00 5:57 AM, Steve Dimse at sdimse@netrox.net wrote:

> On 3/18/00 11:28 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:
>
>>> I emulate the Peet format because there is lots of APRS software out there
>>> that knows how to deal with that format. Alas NONE of them can deal with
>>> the APRS format yet, so I had to pick something.
>>
>> uh ... now I am confused, NONE of what can deal with APRS format? NONE of
>> the APRS programs can handle APRS format?????
>>
> Actually, what he is saying is true, as bizarre as it sounds at first
> glance. None of the APRS programs expect a local weather station to send
> data to it in APRS format. They are all set up to use various commercial

> weather stations. Of these, the Peet format is the most versatile, it is
> the only one you can uise as a stand-alone weather station as well as
> with a computer/APRS client. There is also other software logging
> programs you can use that have nothing to do with APRS that use the Peet
> format...
>
> Steve K4HG

OK, then I did understand correctly ... now ... if the Peet format is such a problem for the current T238 design, why not one of the others that is supported by the various programs. I am pretty sure one of the others that will run at 4800 or higher _is_ supported by all the programs.

The only thing Peet really has to offer is that its stuff will run 'stand alone' i.e. can be fed directly to a TNC without an APRS program running to arbitrate its output.

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

"Despite the bleating of various socialistically-anointed freakshow groups, the vast majority of us realize that bringing children into the world is not only the most wonderful endeavor with which we can be associated but absolutely essential if we aren't going to put ourselves on the EPA's endangered species list." Winston Borden

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] Re: Why Peet?

From: Steve Dimse <sdimse@netrox.net>
Date: Sun, 19 Mar 2000 11:24:37 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72070-2000.03.19-10.24.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/19/00 11:03 AM Brian B. Riley (brianbr@wulfden.org) wrote:

> OK, then I did understand correctly ... now ... if the Peet format is such
>a problem for the current T238 design, why not one of the others that is
>supported by the various programs. I am pretty sure one of the others that
>will run at 4800 or higher _is_ supported by all the programs.
>
Which would you suggest. There really are only two others I can think of, the Davis, which is a query protocol, not a streaming one, so it is not appropriate for this use, and the Radio Shack, which is now discontinued. Any others I'm forgetting about?

Did I miss something? I thought Will had this working...

>The only thing Peet really has to offer is that its stuff will run 'stand
>alone' i.e. can be fed directly to a TNC without an APRS program running to
>arbitrate its output.
>
Another big plus is the Weather Picture, which is pretty cool. No other format has the variety of software and hardware support the Peet has.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] Re: Why Peet?

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 19 Mar 2000 10:40:26 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72080-2000.03.19-11.39.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Dimse wrote:

> On 3/19/00 11:03 AM Brian B. Riley (brianbr@wulfden.org) wrote:
>
> Did I miss something? I thought Will had this working...

>
> >The only thing Peet really has to offer is that its stuff will run 'stand
> >alone' i.e. can be fed directly to a TNC without an APRS program running to
> >arbitrate its output.
> >

The T238 operates stand alone with a TNC. I presently use a KPC-3+ without any
problem. We use the Sproul format which does not include position in the wx
packets, which are sent every 5 minutes. We send position information using the
beacon text every 30 minutes. Will's latest revision of the software supposedly
also includes the Peet format, but I have not checked it out yet.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

31. [wxsig] DS18S20 Temperature Sensor

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 19 Mar 2000 10:54:18 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72083-2000.03.19-11.53.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I've been running the new temperature sensor (DS18S20) in the real world
for about 18 hours now and have seen no errors. Errors in this sense
does not refer to accuracy, but rather to communication errors between
the T238 board and the temperature senor located at the end of a 150'
length of cat5 network cable. The optional +5V terminal on the DS18S20
is being used to supply current during the temperature to digital
conversions which happen every 5 seconds. So, there have been about
13,000 of these conversions without an error. My conclusion is that
this sample of the DS18S20 will work in the weather station with the
existing T238 software if the +5V is hooked to the transducer.

On another subject, a question for Steve B. Should I announce on the
Dallas Semiconductor [weather] reflector that this sig [wxsig] exists
and invite anyone who is interested to join. This would bring in a
different class of users (non-hams) and might give a different
perspective that might be a good influence on the final product.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] Re: Why Peet?

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 19 Mar 2000 17:04:57 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72140-2000.03.19-16.06.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/19/00 11:24 AM, Steve Dimse at sdimse@netrox.net wrote:

> On 3/19/00 11:03 AM Brian B. Riley (brianbr@wulfden.org) wrote:
>
>> OK, then I did understand correctly ... now ... if the Peet format is such
>> a problem for the current T238 design, why not one of the others that is
>> supported by the various programs. I am pretty sure one of the others that
>> will run at 4800 or higher _is_ supported by all the programs.
>>
> Which would you suggest. There really are only two others I can think of,
> the Davis, which is a query protocol, not a streaming one, so it is not
> appropriate for this use, and the Radio Shack, which is now discontinued.
> Any others I'm forgetting about?
>
> Did I miss something? I thought Will had this working...
>
>> The only thing Peet really has to offer is that its stuff will run 'stand
>> alone' i.e. can be fed directly to a TNC without an APRS program running to
>> arbitrate its output.
>>

> Another big plus is the Weather Picture, which is pretty cool. No other
> format has the variety of software and hardware support the Peet has.

 I realize that and I do concur, but the point is the T238 is go to
arbitrate between a One-Wire Weather System and the real world (the simple
display) and also provide streaming data via a serial port. Now if it
emulates the Peet Format, its fine by me. As I understand this discussion,
the "problem" with emulating the Peet format is that an exact emulation in
both format and communications parameters will include streaming data at
2400 baud, wherein lies the problem within the T238 firmware as it is using
a 100ms interrupt cycle and sending Peet data at 2400 baud would use up
101ms and data may get mangled.

Now it seems to me I must ask ... "Where/ by what are we constrained to
2400 baud?" Yes! I know it's the baud rate that Peet streams data from its
station. BUT, does any of the software/firmware we are to interface with
demand 2400 baud for Peet? In other words do X/DOS/Win/MacAPRS or Xastir
automatically set 2400 baud when you spec a Peet weather station and prevent
you from setting it otherwise? I just checked MacAPRS 3.4.4 and you setup
the weather station type and some parameters in one window, then go to the
Communications menu and select Weather Port, Apple Serial Tool and then put
whatever baudrate you want. Since I have nothing to hang on there I cannot
assure you that MacAPRS doesn't slide in and set it to 2400 baud
unannounced, that would be very unMac-like ... I would suspect WinAPRS is
that way as is DOS APRS.

 So the question remains is what is holding us to 2400 baud as part of the
Peet emulation?????

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

33. [wxsig] Re: Why Peet?

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 19 Mar 2000 17:11:28 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72142-2000.03.19-16.10.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/19/00 12:40 PM, Russ Chadwick at kb0tvj@bouldernews.infi.net wrote:

> The T238 operates stand alone with a TNC. I presently use a KPC-3+ without
> any problem. We use the Sproul format which does not include position in the
> wx packets, which are sent every 5 minutes. We send position information
> using the beacon text every 30 minutes. Will's latest revision of the
> software supposedly also includes the Peet format, but I have not checked it
> out yet.

  "We send position information using the beacon text every 30 minutes" -
who, the TNC or the T238?

 .. and another question, off topic but none-the-less germane, how/what
symbol(s) do we use when you have a weather station that is a Wide-N-N digi?

 Is there any thoughts about an alternate program for the T238 wiring to a
MX614 and a transmitter and have it be a PIC-E-like weather transmitter?

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>

```
  For PGP Keys  <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

34. [wxsig] Re: Why Peet?

```
From: Steve Dimse <sdimse@netrox.net>
Date: Sun, 19 Mar 2000 17:17:57 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72147-2000.03.19-16.17.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/19/00 5:04 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:

>
> So the question remains is what is holding us to 2400 baud as part of the
>Peet emulation?????
>
Weather picture for a star. I do not know about whether any of the
programs override the settings. Certainly no one has ever tested this...

Steve K4HG

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

35. [wxsig] Re: Why Peet?

```
From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 19 Mar 2000 17:39:08 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72156-2000.03.19-16.38.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/19/00 5:17 PM, Steve Dimse at sdimse@netrox.net wrote:

> On 3/19/00 5:04 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:
>
>>
>> So the question remains is what is holding us to 2400 baud as part of the
>> Peet emulation?????
>>
> Weather picture for a star. I do not know about whether any of the
> programs override the settings. Certainly no one has ever tested this...
>
> Steve K4HG
>

 Weather Picture ??? is this a separate device from Peet, that can be hung
on the serial port? If that is the case, then I see the 'desire' for Comm
protocol emulation ... but I still question priorities and the 'need;' I was
operating under the assumption that this was an APRS related project. If the
code runs so well right now without going to 2400 baud, then lets go with
that and get the kits out and distributed and really shake down the firmware
with regards to being an APRS weather station, meanwhile our trusty
codesmiths can consider how to handle Peet baudrate under less pressure.



  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys  <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

36. [wxsig] Re: Why Peet?

From: Steve Dimse <sdimse@netrox.net>
Date: Sun, 19 Mar 2000 17:45:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72157-2000.03.19-16.45.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/19/00 5:39 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:

> Weather Picture ??? is this a separate device from Peet, that can be hung
>on the serial port? If that is the case, then I see the 'desire' for Comm
>protocol emulation ... but I still question priorities and the 'need;' I was
>operating under the assumption that this was an APRS related project. If the
>code runs so well right now without going to 2400 baud, then lets go with
>that and get the kits out and distributed and really shake down the firmware
>with regards to being an APRS weather station, meanwhile our trusty
>codesmiths can consider how to handle Peet baudrate under less pressure.
>
Again, from what I read from Will's post on the lastest version, it is
working at 2400 baud. Steve seems to indicate that he has it up and
running. Is this an erroneous reading of the situation?

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] Re: Why Peet?

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 19 Mar 2000 17:33:51 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72202-2000.03.19-18.33.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley (KA2BQE)" wrote:

>   "We send position information using the beacon text every 30 minutes" -
> who, the TNC or the T238?

We program the TNC to do this. The only thing that the T238 knows how to do is to
output averaged data in APRS on-the-air format every 5 minutes. Correction, it can
now do Peet format too.

> .. and another question, off topic but none-the-less germane, how/what
> symbol(s) do we use when you have a weather station that is a Wide-N-N digi?

So far, all that we have done is a stand alone weather station. However, it would
be easy to also make it a digi by reprogamming the KPC-3+ ver 8.2 to be a digi, but
I don't know what icon we would use.

> Is there any thoughts about an alternate program for the T238 wiring to a
> MX614 and a transmitter and have it be a PIC-E-like weather transmitter?
>

Haven't thought about that.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] Re: Why Peet?

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 19 Mar 2000 17:38:24 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72203-2000.03.19-18.37.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Dimse wrote:

> Again, from what I read from Will's post on the lastest version, it is
> working at 2400 baud. Steve seems to indicate that he has it up and
> running. Is this an erroneous reading of the situation?
>

My understanding is the same.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] Re: Why Peet?

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 19 Mar 2000 18:57:49 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72213-2000.03.19-19.57.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:

> Now that we have wandered over here ... question occurs to me about just
> how much program space is in this beastie, I have to admit the 6808 is a
> stranger to me. I have some long ago experience with 6502, 6800, and a
> little with 6809, but the 6805 and 6808 are new birds to me.

Will would have to give the precise answer, but I think that he has used 4k so far out of a total of 32k. So, there's lots left. In short, we will be able to do lots of things.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Re: Why Peet?

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 19 Mar 2000 21:03:46 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72217-2000.03.19-20.04.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/19/00 7:33 PM, Russ Chadwick at kb0tvj@bouldernews.infi.net wrote:

>> Is there any thoughts about an alternate program for the T238 wiring to a
>> MX614 and a transmitter and have it be a PIC-E-like weather transmitter?
>>
>
> Haven't thought about that.

It seems feasible, sort of the WeatherStation equivalent of a Mic-E/TigeTrak/etc trackers ...

Now that we have wandered over here ... question occurs to me about just how much program space is in this beastie, I have to admit the 6808 is a stranger to me. I have some long ago experience with 6502, 6800, and a little with 6809, but the 6805 and 6808 are new birds to me.

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
For my PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

"...error reading WinOS. (A)bort, (R)etry, (M)acintosh?"

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] More input

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 19 Mar 2000 21:32:37 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72237-2000.03.19-22.27.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

I'd prefer for us to get a bit further along with the beta program before we get a lot more folk involved from the Dallas reflector.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] Peet and other stuff

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 19 Mar 2000 21:31:10 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72238-2000.03.19-22.27.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Got busy today and didn't check email until now. Lots of traffic! I'll try to not do that again!

For starters, I was just whining about Peet because its baud rate didn't quite jive with my way of structuring my interrupt mechinism and part of the reason was a whole bunch of useless dashes. The Peet format using 2400 baud is implemented in the 1.07.1 release and Steve B confirms it works fine. The only cost ended up being an extra 5 bytes of RAM for a lopsided message buffer so no data gets lost. If RAM gets tight again, it could get changed later. I'll curb my whining a bit more in the future. THERE WASN'T THAT BIG OF A PROBLEM IMPLEMENTING THE PEET FORMAT AT 2400 BAUD! While the Peet format may not be ideal for me, it is a fairly accepted (and published) format. Yes, it is weird that none of th PC apps accept APRS format for weather stations, but since it wasn't official until a couple of months ago, that doesn't seem that unusual.

WinAPRS does support 9600 baud, which is why I released it first at 9600 baud. Steve told me about the weather picture box that wasn't programmable, so I pretty much did need to change. It isn't like there isn't enough time to send the data, I need about 205ms to send the data and have 5 seconds to do it. Such is the hazards of following someone elses format, you should follow it 100%.

As currently implemented, the T238 board does not send position information. There is currently a religious battle in "aprsig" about if the weather data should include position. My intent is to add this at some time as a user option. For now I am expecting you to set up your BEACON and BTEXT parameters to send out your position at whatever rate you want. The simplest (shortest, most frequency-efficient, etc) is an exclamation mark, your coordinates, and an underscore, nothing else. This is covered in the operations manual. The rate I have personally chosen is 43 minutes. The UNPROTO path that Russ suggested I use that has worked well here in Denver is WIDE3-3 as we have some decent digipeaters.

Brian: I don't know what the MX614 is or what it wants for input. Where should I look?

The 1.07.1 release consumes about 7K of application space (8000-9a00) and 4K is reserved for the monitor and flash variables (f000-fdff). The monitor is less than 700 bytes and I only have about 384 bytes chewed up for variables so far. I still have lots of room to add goodies like rain guages, data logging, real time clocks, barometric pressure, humidity, etc. RAM will no doubt be my nebisis before flash space will.

Brian: The biggest problem with sending averaged data every few minutes is that to do it right I would have to keep running averages of the data. That means storing ALL the data, then knowing which ones to toss. That is

very RAM intensive. All I do now is accumulate totals over five minutes
and then divide after five minutes. Accounting for erroneous samples
complicates things a bit, but not overly so. Also, even resending the same
data would be difficult as I generate the message in pieces from the
averaged and send it out in pieces. I don't keep the averaged data to
re-generate the message later. I'll take a look at the web page you send
and see if there is another way to handle the secondary port.

Domestic duties interfered with weather stuff this week. I got a good
first crack at the rain guage but still have a while to go. I'll do
manuals during the week, thanks for the additional input Russ.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] New graph feature

From: Steve Dimse <sdimse@netrox.net>

Date: Mon, 20 Mar 2000 08:34:09 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72336-2000.03.20-07.33.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thought you all might like to see a new feature I'm working on with the
APRS database system. I can generate graphics now, here is a temp curve
for Russ's 1-wire station:

http://www.findU.com/cgi-bin/temp.cgi?call=kb0tvj-5

Long way to go aesthetic-wise, but might be fun for you to watch.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] Re: Peet and other stuff

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>

Date: Mon, 20 Mar 2000 16:40:08 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72442-2000.03.20-15.39.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/19/00 11:31 PM, William Beals at wmbeals@compuserve.com wrote:

> Brian: I don't know what the MX614 is or what it wants for input. Where
> should I look?

 Ask Steve. It is the modem chip that the PIC-E uses.

  73 de brian, <mailto:ka2bqe@amsat.org>

--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] Re: New graph feature

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Mon, 20 Mar 2000 16:42:32 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72444-2000.03.20-15.44.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/20/00 8:34 AM, Steve Dimse at sdimse@netrox.net wrote:

> Thought you all might like to see a new feature I'm working on with the
> APRS database system. I can generate graphics now, here is a temp curve
> for Russ's 1-wire station:
>
> http://www.findU.com/cgi-bin/temp.cgi?call=kb0tvj-5
>
> Long way to go aesthetic-wise, but might be fun for you to watch.

 really great Steve! uuhhhhh ... how about a time scale along the bottom ..
it just might make the display a tad more meaningful! <grin>

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] Re: New graph feature

From: Steve Dimse <sdimse@netrox.net>
Date: Mon, 20 Mar 2000 16:47:58 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72445-2000.03.20-15.47.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/20/00 4:42 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:

> really great Steve! uuhhhhh ... how about a time scale along the bottom ..
>it just might make the display a tad more meaningful! <grin>
>
That's what I mean by no aesthetics...this will all get done, but it
takes time. Right now I'm concentrating on getting all the pieces
together, the pretty stuff comes later!

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

47. [wxsig] New temperature sensor 50 hrs

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 20 Mar 2000 19:21:43 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72494-2000.03.20-20.21.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The new 1-Wire temperature sensor has worked over 50 hours and not had a
single communications error. In those 50 hours, there were 8 wind
direction errors and no wind speed errors. This is somewhat better than
my wirewrap prototype did.

The temperature data as shown by Steve's neat graphing program looks
pretty good and agrees with the general weather conditions. I've looked
at Steve's graphs with two browsers. At home I use Netscape 4.7 and it
works and the graphs look great. At work I use Internet Explorer 5.0
and it goes into a Microsoft image program that plots it with a
checkerboard background in the graph area. Also, I think that it makes

an error in the vertical axis and I will check that tomorrow morning.

Anyway, pretty neat stuff, Steve.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Re: New temperature sensor 50 hrs

From: Steve Dimse <sdimse@netrox.net>
Date: Mon, 20 Mar 2000 21:29:35 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72495-2000.03.20-20.29.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/20/00 9:21 PM Russ Chadwick (kb0tvj@bouldernews.infi.net) wrote:

>The temperature data as shown by Steve's neat graphing program looks
>pretty good and agrees with the general weather conditions. I've looked
>at Steve's graphs with two browsers. At home I use Netscape 4.7 and it
>works and the graphs look great. At work I use Internet Explorer 5.0
>and it goes into a Microsoft image program that plots it with a
>checkerboard background in the graph area. Also, I think that it makes
>an error in the vertical axis and I will check that tomorrow morning.
>
I think the vertical axis is OK, I've checked a few stations against the
raw data, and it looks right. You can use the wx.cgi to request the raw
data if you want to match them up. The original version I announced made
no attempt to scale the horizontal axis, each data points was 3 pixels
left of the prior one. That is now fixed, it should look better now...

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] Rain Gauge Heater

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 21 Mar 2000 20:36:06 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72728-2000.03.21-21.35.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here's an item from the Dallas Semiconductor weather reflector about a
heater for the rain gauge so that you can melt snow and read the liquid
equivalent. By the way, Dallas Semiconductor sells a good and
inexpensive tipping bucket rain gauge. Will is currently working on
getting it interfaced to the T238.

Russ

> -----Original Message-----
> From: torvald.konstali@telenor.com [SMTP:torvald.konstali@telenor.com]

> Sent: Tuesday, March 21, 2000 2:38 AM
> To: weather@ibutton.com
> Subject: [weather] Rain Gauge Heather
>
> Hello,
>
> Although the winter season is soon gone at the northern hemisphare, I
> would
> like to share to you my results on experimenting with a simple heather

> system for the Dallas 1-wire rain gauge. The system has only been in
> operation for a couple of weeks, in this period we have only have one
> minor
> snowfall, and the temperature has not been much below freezing. But it

> seems
> to work!
>
> Here is the link: http://www.geocities.com/t_konstali/rain_gauge.htm
>

> Torvald Konstali

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] Posting from DS [weather] reflector

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 22 Mar 2000 17:03:09 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-72965-2000.03.22-18.02.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This item appeared on the Dallas Semiconductor reflector this morning.
It's about the rain gauge and I thought that it would be of interest
here.

> -----Original Message-----
> From: Robert Hackenberg [SMTP:rhackenb@atl.lmco.com]
> Sent: Wednesday, March 22, 2000 6:55 AM
> To: 'weather@ibutton.com'
> Subject: [weather] rain gauge
>
> I am really impressed with the performance of our DS rain gauge. Bob
> Jones did an excellent job calibrating it. Since yesterday around
> noon
> our region got some very heavy rains. Before the rains started, our
> measurement was 2.51 inches for March. Right now it is at 5.2 inches.

>
> That seems to correspond to measurements being reported by our local
> TV
> stations.
>
> Our weather page is
>   http://www.atl.external.lmco.com/philaview/weather/weather.html
>
> I also am running a cgi script that gets only the weather readings and

> puts them on a page that refreshes every minute:
>   http://www.eticomm.net/~rhackenb/weather/get_atl.cgi
>
> I let this page run on my browser yesterday evening and it seemed like

> we would get an increase of .01 inches with each refresh. I am
> looking
> into building a dynamic plot of the rain values for the month. It
> should be interesting to watch the rain come in spurts (pun intended).

>
> -- bob
>
>
> --
> Robert Hackenberg, Ph.D | Lockheed Martin Advanced Technology Labs
> rhackenb@atl.lmco.com | 1 Federal St. A&E-3W
> 856-338-3918 (Fax: 4122) | Camden, NJ 08102
> http://www.atl.external.lmco.com/philaview/weather/weather.html

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] Mailings

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 24 Mar 2000 15:50:45 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73374-2000.03.24-14.50.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All the parts are in and last night I put the wraps on 8 beta kits.   In the
mail today are:

Guy and Steve D. - a LCD display (extended temp), connector, and cable.

Aaron, Brian, and Russ - a complete kit.

Jim - I need your mailing address.

Rex - Have you decided that you would like to participate?

Everything went out Priority Mail from Southeast GA. So everyone should see
their parts/kits in 2-3 days.

I have three kits with no ones name on them. If any one knows of a likely
candidate, please let the group know.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Re: Mailings

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Fri, 24 Mar 2000 16:20:46 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73378-2000.03.24-15.20.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/24/00 3:50 PM, Steven R. Bible at srbible@gate.net wrote:

> All the parts are in and last night I put the wraps on 8 beta kits.   In the
> mail today are:
>
> Guy and Steve D. - a LCD display (extended temp), connector, and cable.
>
> Aaron, Brian, and Russ - a complete kit.
>
> Jim - I need your mailing address.
>
> Rex - Have you decided that you would like to participate?
>
> Everything went out Priority Mail from Southeast GA. So everyone should see
> their parts/kits in 2-3 days.
>
> I have three kits with no ones name on them. If any one knows of a likely
> candidate, please let the group know.

 great ....

 good timing. I am really impressed with Dallas Semi ... I emailed them last
weekend about getting DS18S20 replacements and the four DS18S20s showed up
today ...

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Mailings (fwd)

From: John Koster <w9ddd@tapr.org>
Date: Fri, 24 Mar 2000 17:20:16 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73404-2000.03.24-17.20.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

---------- Forwarded message ----------
Date: Fri, 24 Mar 2000 15:50:45 -0500
From: Steven R. Bible <srbible@gate.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Subject: [wxsig] Mailings

> All the parts are in and last night I put the wraps on 8 beta kits.
> In the mail today are:
>
> Guy and Steve D. - a LCD display (extended temp), connector, and cable.

I feel left out.

Any idea why there is no 'reply to:' in the message header on this sig? A
pain.

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Re: Mailings

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Fri, 24 Mar 2000 21:05:20 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73439-2000.03.24-22.06.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Steven R. Bible" wrote:

> I have three kits with no ones name on them. If any one knows of a likely
> candidate, please let the group know.

I just checked with Phil Pearsall, kc5lxc, who operates a wide repeater in
Colorado Springs and he would like to be a beta tester of the weather station
kit. His e-mail is:

pearsall@msn.com

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] No flashing LED

From: William Beals <wmbeals@compuserve.com>
Date: Fri, 24 Mar 2000 21:21:15 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73441-2000.03.24-22.18.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve:

Yes, the triple flash of the LED was a feature I added based on beta feedback, it isn't in the initial
parts I programmed.
Don't forget that the boot on those initial chips requires pushing the Down and Select buttons instead
of the up and down buttons.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] More Mailings

From: "Steven R. Bible" <srbible@gate.net>
Date: Sat, 25 Mar 2000 11:36:28 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73508-2000.03.25-10.36.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In the mail today are:

- LCD and cable assembly to John K.

- 2 LCDs and 1 cable assembly to Will and Russ.

- Wx Kit to Rex Blaine

Sent Priority Mail. Look for them in 2-3 days.

I've run out of cable assemblies, I order too few. So the next batches will
go out next week when I get parts.

I have 5 beta kits left (one has Jim Blair's name on it when I receive his
adx). Still looking for suitable beta candidates. Guy and Russ have
suggested one each, but I have not heard back from them.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] Rain stats

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 25 Mar 2000 19:02:00 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73579-2000.03.25-20.06.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I'm making good progress on the rain code. I have a first shot at the
sensor location routine done and am working on the basics of the data
gathering routines. I'd like some feedback on what kind of stats to keep.
 Here is what I am suggesting based on what I would like to know:

1) Rain since midnight.
2) Rain yesterday
3) Rain since last reset (power-up or user-initiated)

Keep in mind I prefer simple, so I'd like to keep the number of variables
being tracked to a minumum.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

58. [wxsig] Re: Rain stats

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 25 Mar 2000 21:34:19 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73595-2000.03.25-22.34.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> I'd like some feedback on what kind of stats to keep.
> Here is what I am suggesting based on what I would like to know:
>
> 1) Rain since midnight.
> 2) Rain yesterday
> 3) Rain since last reset (power-up or user-initiated)
>
> Keep in mind I prefer simple, so I'd like to keep the number of variables
> being tracked to a minumum.

>From looking at the APRSdos documentation, it looks like there are 4 different rainfall statistics that can be sent and decoded by the APRS programs. They are:

r123 is 1.23" of rain in last hour
p123 is 1.23" of rain in last 24 hours
P123 is 1.23" of rain since midnight
#123 is raw count data but the documentation isn't too explicit

In addition to what is transmitted, there is also the question of what is displayed on the local LCD, but not transmitted out every 5 minutes with the wind and temperature.

Here's the way that I would order these:

1. rain since midnight - 1 storage register
2. rain last 5 min period - no storage register   (local display only)
3. rain since start of month - 1 storage register (local display only)
4. rain last hour - 12 storage registers
5. rain since start-up - 1 storage register   (local display only)
6. rain last 24 hours - 24 storage registers

Number of storage locations in 4 and 6 might be able to be reduced by storing 2 numbers/byte.

I think we should do at least the first three.   Number 4 would be nice if we had the resources.

Number 5 isn't of much use unless you know when start-up was.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

59. [wxsig] Rain sorta working

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 25 Mar 2000 22:14:53 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73596-2000.03.25-23.28.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Rain guage support is sortof working. I have about 90% of it debugged, there are a few quirkinesses that need to get ironed out. The fun part was getting the setup routines to be able to distinguish between the two counters, one for wind speed and one for the rain guage. There is some whizz-bang ID system on the rain guage that seems hopelessly complicated. I opted for something simple, here is how I implemented it:

1) When running the wind/temperature setup, that routine checks to see if there are two counters on the bus. If there is only one, it assumes it is the wind counter and runs setup. If there are two, it asks the user to unplug the rain guage before allowing the user to continue. Once there is only one, the setup continues as normal. Note that for folk without a rain guage, they will see no difference in the setup routine. This is the best way I can see to

2) When running the rain guage setup, the routine first checks to see if there is a valid ID for the wind speed counter. If not, it tells the user to run that calibration first. If the other sensor does exist, then it scans for both IDs and saves whichever one is NOT the wind speed ID as the rain guage ID.

The above routines should not require climbing poles as long as the user sets things up in the correct sequence. It also allows re-running setup routines if needed without messing up the other sensor. I think it is OK unless someone can shoot holes in it.

I have basically added another status screen to scroll through that shows the rain since midnight, rain yesterday, and rain since reset.

will

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] Rain options

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 25 Mar 2000 22:31:08 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73597-2000.03.25-23.30.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ (and all):

I was afraid you would ask for all the options! As you are aware, the two biggies are rain-last-hour, and rain-last-24-hours. Keep also in mind that each reading is two bytes at .01". I imagine that rain in Florida might be able to exceed 2.55 inches in an hour, so compressing the data is tough. The basic compromise is length of the period versus the accuracy you want to sample it. Having rain-last-24-hours taking up 24 locations (48 bytes) means your reporting accuracy can be off by +/- an hour.

I have the three settings I mentioned on one screen now (granted only 2x20 now).

Any chance I can rationalize that the folk that want stats such as rain-this-month, rain-last-month, rain-this year, etc can be deferred to folk that have computers. This data will be easily gleaned when I get my data logging going on an i-button for transfer to a PC. They will get daily stats and can then swizzle them to their hearts content.

Right now all my rain measurements use 16-bit numbers, meaning the max I can deal with is 655.36 inches. Hopefully this won't be exceeded in an average day, or even a year in most places. What does Florida get in a year?

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] For future reference

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 25 Mar 2000 22:26:34 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73598-2000.03.25-23.30.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

While messing with the rain guage this eveing, I tried putting a telephone double-adapter on the back connector. It don't work so good. The double-adapter interferes with both the power connector as well as the TNC DE-9 connector. The only reason I bring it up is that between the rain guage, data logger, and other possible devices, an adapter of sorts is going to pretty common for this kit. It ain't worth a board turn, but something to think about if we end up doing a spin for other reasons.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] New Temperature sensor

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 26 Mar 2000 12:36:09 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73712-2000.03.26-13.37.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just finished running the T238 and 1-Wire weather station with the new DS18S20 temperature sensor for 170 hours. The temperature sensor is mounted external to the 1-Wire weather station plastic housing and has the optional +5 V attached to the third terminal. During the 170 hour test, the T238 recorded zero temperature error, zero wind speed errors, and 29 wind direction errors. The suprising thing to me was that no wind speed or temperature errors were recorded. This is better than with my prototype wire wrap board. The wind direction errors were not unexpected and about what I had seen with the prototype board.

I am currently doing a test where the temperature data in about a one foot diameter sphere is being measured with 5 different devices and recorded by 4 of them. I hope to get some idea of the accuracy of the new temperature sensor. I'm using the DS18S20 and three Thermochrons to measure and record the temperature every 5 minutes. I also have a standard outdoor thermometer and I check it frequently.

Thermochrons are a DallasSemi product that look just like a mercury battery, but inside have battery, thermometer, clock, storage, i/o equipment. In short, everything to measure and record the temperature. They will record and store the temperature every 5 minutes for one week and then I will bring them to the computer, plug them in and download the temperature data. Before I deployed them, I put them in an ice water bath to verify the calibration. They are water proof to 10 m depth. They are used in the food shipping industry to monitor the temperature of fish or beer, etc. as the shipment goes across country. Not only do they tell the max temperature, but also when it occurred. That way the shipper knows where to send the bill for bad fish or warm beer.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

63. [wxsig] Re: Rain stats

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 26 Mar 2000 14:50:34 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73716-2000.03.26-13.50.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/25/00 9:02 PM, William Beals at wmbeals@compuserve.com wrote:

> Folks:
>
> I'm making good progress on the rain code. I have a first shot at the
> sensor location routine done and am working on the basics of the data
> gathering routines. I'd like some feedback on what kind of stats to keep.
> Here is what I am suggesting based on what I would like to know:
>
> 1) Rain since midnight.
> 2) Rain yesterday
> 3) Rain since last reset (power-up or user-initiated)
>
> Keep in mind I prefer simple, so I'd like to keep the number of variables
> being tracked to a minumum.
>
> will

 It seems to me that all you can do is keep 'rain since bootup' through
0000Z and then when you roll over a day rain since last 0000Z.

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] Peet format

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 26 Mar 2000 14:51:04 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73717-2000.03.26-13.50.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

what exactly gets sent at the beginning of a Peet formatted weather data
line???

   $ULTW<space><weather data>

   ???

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
 For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

  "One of the deep mysteries to me is our logo, the symbol of lust
   and knowledge, bitten into, all crossed with in the colors of the
   rainbow in the wrong order. You couldn't dream of a more
   appropriate logo: lust, knowledge, hope, and anarchy."
   -- Gassee - Apple Logo

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] Re: Peet format

From: Steve Dimse <sdimse@netrox.net>
Date: Sun, 26 Mar 2000 14:56:33 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-73718-2000.03.26-13.56.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/26/00 2:51 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:

>what exactly gets sent at the beginning of a Peet formatted weather data
>line???
>
> $ULTW<space><weather data>
>
There are two formats. This is the "packet mode" format. It only gets
sent once every 5 minutes. It is meant for a TNC set to convers mode.

The common format is the data logger format, which starts with !!.
Theseformats are documented on their web site http://www.peetbros.com

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

66. [wxsig] Testing Reply to

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 26 Mar 2000 15:48:06 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73724-2000.03.26-14.48.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Testing to see if I fixed the "Reply to" header to send it back to the list.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

67. [wxsig] RE: Testing Reply to

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 26 Mar 2000 15:54:46 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73725-2000.03.26-14.54.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

And the reply!!

Hah!

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Steven R. Bible
> Sent: Sunday, March 26, 2000 3:48 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Testing Reply to
>
>
> Testing to see if I fixed the "Reply to" header to send it back
> to the list.
>
> - Steve
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] Re: Peet format

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 26 Mar 2000 16:21:14 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73733-2000.03.26-15.21.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/26/00 2:56 PM, Steve Dimse at sdimse@netrox.net wrote:

> On 3/26/00 2:51 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:
>
>> what exactly gets sent at the beginning of a Peet formatted weather data
>> line???
>>
>> $ULTW<space><weather data>
>>
> There are two formats. This is the "packet mode" format. It only gets
> sent once every 5 minutes. It is meant for a TNC set to convers mode.
>
> The common format is the data logger format, which starts with !!.
> These formats are documented on their web site http://www.peetbros.com
>

 I assume then that if I select the Peet format we get the $ULTW form??? The
other format available will be which?

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
 For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

  "Frisbeetarianism, n.: The belief that when you die, your soul goes
   up on the roof and gets stuck." -- author unknown

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] Re: Testing Reply to

From: John Koster <w9ddd@tapr.org>
Date: Sun, 26 Mar 2000 16:10:51 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73736-2000.03.26-16.10.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Fixed it for me.

I'm wondering I send a message this morning which I've never seen on the
list. Perhaps I wasn't watching, and it went to whomever originated
it.   Had to do with the 2 x 1 telephone adapter. It could have also gone
into the bit bucket, since I lost connection during the following message
I was responding to. Seems like the server went down for about an hour,
or maybe it was my ISP, although had connections to other places.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==

                  Don't take it personal, but......

           Plain text works for me. Nix on HTML for email.

On Sun, 26 Mar 2000, Steven R. Bible wrote:

> Testing to see if I fixed the "Reply to" header to send it back to the list.
>
> - Steve
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

70. [wxsig] RE: Testing Reply to

From: John Koster <w9ddd@tapr.org>
Date: Sun, 26 Mar 2000 16:11:48 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73737-2000.03.26-16.11.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Isn't magic wonderful when it works?

John Koster, W9DDD
<w9ddd@tapr.org>

On Sun, 26 Mar 2000, Steven R. Bible wrote:

> And the reply!!
>
> Hah!
>
> - Steve
>
>
> > -----Original Message-----
> > From: bounce-wxsig-15059@lists.tapr.org
> > [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Steven R. Bible
> > Sent: Sunday, March 26, 2000 3:48 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Testing Reply to
> >
> >
> > Testing to see if I fixed the "Reply to" header to send it back
> > to the list.
> >
> > - Steve
> >
> >
> > ---
> > You are currently subscribed to wxsig as: srbible@gate.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] Rain tallying

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 26 Mar 2000 15:27:30 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73740-2000.03.26-16.22.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

Yes, for the first day rain since boot and rain today will match.

HOWEVER: Right now I'm working on putting the rain count value in flash
memory, that way the rain-since-boot will not get affected by a power loss.
 This makes tracking long-term rain stats much less prone to loss due to
power interruptions or firmware updates. The rain guage counter has a
battery in it too, so its value will trancend power interruptions as well.

The format I am using is the data logger format as Steve D said. It is:
(copied form source code comments)

```
;               string: !!aaaabbbbccccddddeeeeffffgggghhhhiiiijjjjkkkk
where
;               !!   - is the header
;               aaaa - is wind speed          (.1KPH)
;               bbbb - is wind direction      (0000-00ff)
```

```
;               cccc - is Temperature in      (.1 degrees F)
;               dddd - is Long term rain      (100ths of an inch)
;               eeee - is Barometric pressure (---- for now)
;               ffff - is indoor temperature  (---- for now)
;               gggg - is outside humidity    (---- for now)
;               hhhh - is inside humidity     (---- for now)
;               iiii - Date                   (day of year)
;               jjjj - Time                   (minute of day)
;               kkkk - Rain since Midnight    (100ths of an inch)

will

-------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
-------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

72. [wxsig] No runs, hits, or errors

```
From: William Beals <wmbeals@compuserve.com>
Date: Sun, 26 Mar 2000 15:18:16 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73741-2000.03.26-16.22.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
Russ:

Cool on the low number of temperature errors.  I'm pretty surprized at
that, given what I understand about the DS18S20s longer conversion time.  I
know that they tried to make the new sensors as compatible as possible with
the old once, so maybe it works better than the app note initially
suggested.  How about termperature accruacy?

will

-------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
-------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

73. [wxsig] Re: Testing Reply to

```
From: William Beals <wmbeals@compuserve.com>
Date: Sun, 26 Mar 2000 15:31:04 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73743-2000.03.26-16.26.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
John:

I got your message about the telephone header, only one copy though.

will

-----Original Message-----
From:   John Koster [SMTP:w9ddd@tapr.org]
Sent:   Sunday, March 26, 2000 3:11 PM
To:     TAPR WX Special Interest Group
Subject:        [wxsig] Re: Testing Reply to
```

Fixed it for me.

I'm wondering I send a message this morning which I've never seen on the
list. Perhaps I wasn't watching, and it went to whomever originated
it.   Had to do with the 2 x 1 telephone adapter. It could have also gone
into the bit bucket, since I lost connection during the following message
I was responding to. Seems like the server went down for about an hour,
or maybe it was my ISP, although had connections to other places.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==

                  Don't take it personal, but......

           Plain text works for me. Nix on HTML for email.

On Sun, 26 Mar 2000, Steven R. Bible wrote:

> Testing to see if I fixed the "Reply to" header to send it back to the list.
>
> - Steve
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(C<6`0:0" `$``````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.```````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`A````4D4Z(%MW>'-I
M9UT@4F4Z(%1E<W1I;F<@4F5P;'D@=&\`&0L!!8 #``X```#0!P,`&@`/`!\`
M! ```"8!`2" `P`.````T <#`!H`#P`>`!\```! `0$)@ $`(0```#DQ,T,T
M0T9%,C$P,T0T,3%!.#4V,# P,$4X.4(S0S Y`/T&`0.0!@"H!P``(0````L`
M`@`!````"P`C```````#`"8```````L`*0```````P`N```````#`#8`````
M`$ `.0``+HOX<I>_`1X`< `!````(0```%)%.B!;=WAS:6==(%)E.B!497-T
M:6YG(%)E<&QY('1O``````(!<0`!````%@````&_EW+XB_Y,/)(#(1'4J%8`
M`.B;/ D``!X``@P!````!0```%--5% `````'@`?# $````7````=VUB96%L
M<T!C;VUP=7-E<G9E+F-O;0```P`&$,$(3$L#``<0&P0``!X`"! !````90``
M`$I/2$XZ24=/5%E/55)-15-304=%04)/55142$5414Q%4$A/3D5(14%$15(L
M3TY,64].14-/4%E42$]51TA724Q,+2TM+2U/4DE'24Y!3$U%4U-!1T4M+2TM
M+4923TTZ2D](3DL``````@$)$ $```!]! ``>00``)$```!,6D9U!&,GD],`
M"@$*,S8!Z" "I /C"0(`8V@*P'-E=# >( <3`H,`4 ^6<')QFC(0EGT*@ C(
M(#L);Y@R-34"@ J!=6,`4 T+`V,`00M@;F<Q,*0S,PQ@;&X"(&4+IL @2F]H
M;CH*H@J$H0J 22!G;P5 >0AA@B '@7-A9V4@`: 3"& %0'1H&9!T96RH97!H
M%K$@&B!A!('D+" "(&QY&V$9D 6@CG ;H!H0"&!G:"X7RIT#\&P)4!?9"O1L
M:0YQ7Q6A`4 1X!BP!9!T$20QJ#8@+2""3P409PN _P= != 91""#%\8?E!]A
M"Q/!'Y9I+3$T- % 'N X,3@P`4 ,T"0C8B N1@-A%[ ,DF(75"!+#&]S&E %
MP%M3352@4#IW.60G@$ !D.41X"X%L&==%\4E4 9@`P(P);=3=6YD87F-&U!-
M"L 0$" R-AM0`P'0)+ @,SHQ,2 D4$TH5U1O);=40:!04B!76 8`< 60>0<Q
M($D", 20!Y %0$>)`V!U<"A8=6)J'\%Q);=;=W@`D"@P!_!E[CHL$"XA"X!G
M,+$+4!PQ_F\B+R,Z'N0+MA?3"N,*@,A&:7@)@"!I!4 "$(,9$AR[22=M('<"
M(/\$@3%"&( 04"G0&: 9)QH0WP0`&2 %L ,`,5%W.3 J8?TW,'89D!; .G %
MP!!0"?"?&V$:`A?$'N FL"X@*V ;!) 0(' $(!B =V%S[&XG!4 ]('00$#%!
M&U#[` ULW<H\3'1.>$#<#JS?P6P(/,:4 LQ%^(UT#Q1(/9(&Q ^XF0_`370
M*G :$OD2$'@@*U :6!L0)] FP?T\44D%0 6@%H UL! @.G']!T!S/P`8H!;!
M0&0",#\`U1H28C718A4@:Q!@&U#Y`)!N8QF0&( )`"XQ!:#6;A; ']!I.U%D
M"'$Q4?<:$@(0':!O`_ Q41DU&":U/2$@+A%P-X%(LV\\4?D&8&5M!" >X$:P
```

```
M&@,04.YR.L(^HT& =P.@-@(9M+\#D1QA&T 7Q#82*?!B&9"+/G)*T6T;H$E3
M4#X1_FP<5$1A-;!'V 0@/O$8L.\:( 7 "U%',',<NR9)&U!85SE$54 7Q#PG
M;#Y[%\H\8#U7OUC/6=]:[SW[5MQ<[T0"(#UA`9!,@371_RU@$$ "( = &U!&
M@#Q 7[/;7!]<]% +8AI!>#UQ!;!N:P0@-@4\8$XU@#M"2+A434PU\TP@"W!L
M'+O^3P.@*;$JL2!@*C$JPQM0+E,:4#IP`Z!2/%!":=L"8!F0=Q^2%[L^,/<^
M\7L[`37 9C@!(_ UDAH2(ETQAB(:Y6E$/D1B`-!KWS[B&A(\$VA6:%8M9H1M
MGO=N%R(&:+!9"& 9H EP&_#O"' )< (P&Y%S+U $\D_@]T$S,%,9H',PX"=L
M:%<_`/\IP')7."8"8 !P;+!D(S[B&QIP1($M,%,D$#4W,/@W34 \$E-P=#YO
MC!?*?R'W<3]R3W-7!M ;`$300-$%H&UP=4SS+G]A%\1_=3]V3W=?>&]TEA?$
M$J$``88``````P`0$ `````#`!$0``````,`@!#_____0 ``,*#2_^1RE[\!
M0 `(,*#2_^1RE[\!"P``@ @@!@`````P ```````$8``````X4````````#
M``* "" &`````# ````````1@`````0A0````````,`!8 (( 8``````, `
M``````!&`````%*%``"W#0```P`)@ @@!@``````P ```````$8``````84`
M```````>`"* "" &`````# ````````1@````!4A0```0````0````X+C `
M"P`F@ @@!@`````P ```````$8`````#H4````````#`"> "" &`````#
M````````1@`````1A0````````,`*8 (( 8``````, ```````!&`````!B%
M````````'@`X@ @@!@`````P ```````$8`````-H4```$````!````````
M`!X`.8 (( 8``````, ```````!&`````#>%```!`````0`````````>`#J
M"" &`````# ````````1@`````XA0```0````$`````````'@`]``$````%
5````4D4Z( `````#``TT_3<``+_J
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

74. [wxsig] Re: Peet format

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 26 Mar 2000 15:31:50 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73744-2000.03.26-16.26.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

The ONLY format I support is the data logger format. Is there a compelling reason to support both?

will

-----Original Message-----
From: Brian B. Riley (KA2BQE) [SMTP:ka2bqe@amsat.org]
Sent: Sunday, March 26, 2000 2:21 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Peet format

on 3/26/00 2:56 PM, Steve Dimse at sdimse@netrox.net wrote:

> On 3/26/00 2:51 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:
>
>> what exactly gets sent at the beginning of a Peet formatted weather data
>> line???
>>
>> $ULTW<space><weather data>
>>
> There are two formats. This is the "packet mode" format. It only gets
> sent once every 5 minutes. It is meant for a TNC set to convers mode.
>
> The common format is the data logger format, which starts with !!.
> These formats are documented on their web site http://www.peetbros.com
>

 I assume then that if I select the Peet format we get the $ULTW form??? The
other format available will be which?

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
 For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

  "Frisbeetarianism, n.: The belief that when you die, your soul goes
   up on the roof and gets stuck." -- author unknown

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(@@6`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?`````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`<````4D4Z(%MW>'-I
M9UT@4F4Z(%!E970@9F]R;6%T`$,)`06 `P`.````T <#`!H`#P`?`#(```!4
M`0$@@ ,`#@```- ``P`:``\``'P`-````+P$!"8 !`"$````Y-3-#-$-&13(Q
M,#-$-#$Q03@U-C P,#!%.#E",T,P.0`!!P$#D 8`$ @```"$````+``(``0``
M``L`(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`
M8(8E%'.7OP$>`' ``0```!P```!213H@6W=X<VEG72!293H@4&5E="!F;W)M
M870``@%Q``$````6`````;^7<Q0E_DP\E@,A$=2H5@``Z)L\"0``'@`># $`
M```%````4TU44 `````>`!\,`0```!<```!W;6)E86QS0&-O;7!U<V5R=F4N
M8V]M```#``80X.^?30,`!Q V! ```@`($ $```!E````0E))04XZ5$A%3TY,
M649/4DU!5$E355!03U)425-42$5$051!3$]'1T521D]234%425-42$5214%#
M3TU014Q,24Y'4D5!4T].5$]355!03U)40D]42#]724Q,+2TM+2U/4DE'20``
M```"`0D0`0```.X$``#J! ``NP<``$Q:1G6F(H%6TP`*`0HS-@'H( *D`^,)
M`@!C: K <V5T,!X@!Q,"@P!0#Y9P<G&:,A"6?0J ",@@.PEOF#(U-0* "H%U
M8P!0#0L#8P!!"V!N9S$PI#,S#&!L;@(@90NFY"!"!R%N.@JB"H0*@ !4:&4@
M3TY,61H@`A!R`, %0$D@<RAU<' )$2 $`"!T)1BA9!E@82 )`&=G<P20&14N
M(!F &D,)<""#&M %H&UP96QL"X!D9R )<&%S`B :4&_W&:<&X!I@/Q?:`_ <
M\!?:_PKT'0`.<16A`4 1X!Z !9!"=!$D,38@+2*"3ST%$&<+@ = != 'D'-A
M?QL@(H,7UB&4(6$+$R&6:3 M,30T`4 =`#$XCC !0 S0)B-B($8#8;L7P R2
M8A=5%V ;P%(#$ !E>2 H2T$R0@!112D@6U--5 !0.FMA,F)Q93A 86TCD!NP
M!;!G71\7U2=0!F ","">W4W5N.1J@>2P%T K $! @,AXV+/ !T":P+6 Z,C%(
M(%!-*S=4;R>W5,!!4%(@5U@&`!S07F,',1F `C <07,%0$?'`V 9P"LX=6)J
M(<$GMSA;=W@`D"L0!_!E.O\N0 G@!4 9)"0O)3H@Y NV3Q?C"N,*@!V1,R\M
M<"]=+=,U(F N4"SP4R&P=CT8L$0'<!!0'' %0'-DE3FR0!; = -@>"XZH>P@
M=R&2%\L^&, X&RXR^R@_*48H*BXIH#M:/' \%4T\<'<0( 5 97@`T'3V;"D0
M&R!T!" 04 (P.?(Y&F)B92,!`P`=(6]F]QQQ,^DAL&0[0!U@'"(:DW-!5QT!
M93]',$%705<D0%5,5%<\<PJP8^AE/CQ%JCY';B[P'#39'%%T=QW0&21S&\ 8
MD&L:,1HU(DCQ:S0!!&(B_1M7205 `B!"A3P60P,"(-=)$$(@.7!R*1 U3= +
M@/YU(;!,<4[!&C$'@ !P-!/Q''%43D-"\4-A'= %H.YN4+%1\01Q+D#=2R(<
MDG\$8 .@&24:/QM&+/!!X&D_+4$Q$ K 0M$#\%:@("$^(51'&)$YT4P52X-D
M;WQC=0> ,,%%@!V2&*!I_P7 1: G4 "0(; #,!6R%H $(&@"0' Z+R]W[5W0
M+AS0$&!B`V!,<!RA_R$S%H5 ZS<U&9 =<!FP!X#_5I);TE9"1' 9D1S@(<%6
MD_\SZ4610J)6DTB#&1-',4LBYS>E1=,9)6%V"W +8 )@_QBP'X)#L5@4'KLB
M@#>5/<V_(H!!,5S\!X &T%/!+@#!SU.!%L AT%Z2+WY>4!>1#UY07M\G8 6Q
M4$=0(.9+*0`$(" \7.8`P ,091W .FTE0'<6@ 5Q;DTJXC\9L#)#/4<08"7?
M`=!N\7*!;S%MF2!*%3<U_TU0)W $`$/ $& *P!>1! #^;2SP<7 SP!B20\ =
M``$0]V&D0>!A@7D(8%;0") L\,]WL07 '8!=,6=O!Y!T=NX@&<!;M1U ;T1B
M++!"I?)T%2!K+DX@(G$<<%%0UF@%L2R@:Q:@=PN0']V[:'@D%5EWP4N26S!R
M"7#_`C!"@7'1!/)#P$6 '<$S,YM@X3/ =VO!!T!S0!RB^G404'(Y<%Z3&$0=
MT"R@OX '0O)%@!K0`F `<&M"(']P(AVR*/!FL"/ ,S,F$#7@-S W34 =`#$0
M3'!?`9 1X"KB%]H2H0"(H ```P`0$ `````#`!$0``````,`@!#_____0 `'
M,. F\_URE[\!0 `(,. F\_URE[\!"P``@ @@!@`````P ``````$8`````
M`X4```````#``* "" &`````# ````````1@`````0A0````````,`!8 (
M( 8``````, ```````!&`````%*%``"W#0```P`)@ @@!@`````P ``````
M`$8``````84````````>`"* "" &`````# ````````1@````!4A0```0``
M``0````X+C `"P`F@ @@!@`````P ```````$8`````#H4````````#`">
M"" &``````# ````````1@`````1A0````````,`*8 (( 8``````, `````
M``!&`````!B%````````'@`X@ @@!@`````P ```````$8`````-H4```$`
M```!`````````!X`.8 (( 8``````, ```````!&`````#>%```!`````0``
M`````>`#J "" &``````# ````````1@`````XA0```0````$`````````
>'@`]``$````%````4D4Z( `````#``TT_3<``),4
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

75. [wxsig] Re: Peet format

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Sun, 26 Mar 2000 18:03:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73747-2000.03.26-17.03.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/26/00 5:31 PM, William Beals at wmbeals@compuserve.com wrote:

> Brian:
>
> The ONLY format I support is the data logger format. Is there a compelling
> reason to support both?
>
> will

 well I am running APRSTK (Bob's satellite tracking version of APRSDOS)
feeding about 4 satellites to the local AMSAT guys ... I have only a single
serial on he old laptop that runs it and was gonna make a try at seeing if I
can make the KPC-3+ v8.3 GPS port transmit the data without it getting
'untimely' so as best I can tell I need the $ULTW so I can give the KPC a
GPSHEAD string to load into LT 1. I am looking for another laptop with two
serial to do the job without this ...

Question, In the Peet in Data Logging format they stream weather data out
more or less constantly and in TNC format they come out without every five
minutes????? So are we sort of mixing things, that is using data logger
format with TNC periodicity ????

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

76. [wxsig] Re: Peet format

From: Steve Dimse <sdimse@netrox.net>
Date: Sun, 26 Mar 2000 18:09:34 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73749-2000.03.26-17.09.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/26/00 6:03 PM Brian B. Riley (KA2BQE) (ka2bqe@amsat.org) wrote:

> well I am running APRSTK (Bob's satellite tracking version of APRSDOS)
>feeding about 4 satellites to the local AMSAT guys ... I have only a single
>serial on he old laptop that runs it and was gonna make a try at seeing if I
>can make the KPC-3+ v8.3 GPS port transmit the data without it getting
>'untimely' so as best I can tell I need the $ULTW so I can give the KPC a
>GPSHEAD string to load into LT 1. I am looking for another laptop with two
>serial to do the job without this ...
>
The !! format works great with TNC's, enter !! as GPSHEAD. Most stand
alone weather stations do this...we have 8 in the Keys alone.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

77. [wxsig] Re: No runs, hits, or errors

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 26 Mar 2000 17:42:00 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73774-2000.03.26-18.43.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> Cool on the low number of temperature errors. I'm pretty surprized at
> that, given what I understand about the DS18S20s longer conversion time. I
> know that they tried to make the new sensors as compatible as possible with
> the old once, so maybe it works better than the app note initially
> suggested. How about termperature accruacy?
>

The new temperature sensor, DS18S20, read 32 deg F in an ice water bath.
Everytime that I have checked with the thermometer adjacent to the sensor
enclosure, the difference is within the accuracy of the thermometer. So, I've
no reason to doubt the accuracy of the DS18S20. In a week, I'll have a more
quantitative answer when I compare with the Thermochrons.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

78. [wxsig] Long calibration runs

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 26 Mar 2000 21:16:53 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73810-2000.03.26-23.07.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Guy:

Russ is right, running the wind/temperature setup (I'm trying to avoid the
word calibration) should be a quick and painless process. For the hundreds
of setups I've done while developing the code, I think the worst I've seen
is the sequence having to start over three times. If you are still taking
longer than that, something is not quite right. Your best isolation method
is to try running the setup using the PC software. That will isolate it to
either the sensor unit or the T238 board/software. I think you have done
this, but can't find the reference.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

79. [wxsig] Peet Format

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 26 Mar 2000 21:10:18 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73811-2000.03.26-23.07.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian (and all):

I do stream out the Peet format every five seconds at 2400 baud. I send
out a string of un-averaged data every five seconds. In this mode I ONLY
send out raw data, I do not try to initialize the TNC or anything like
that. I (hopefully) just look like a dumb weather station.

In the TNC mode I do go through the initialization process to get the TNC
in un-connected converstation mode and then send the averaged data only
every five minutes at 4800 baud.

In the "computer" mode I do not attempt TNC initialization and send out
un-averaged data every five seconds using the APRS format.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com

15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] Things are working (again)

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 26 Mar 2000 22:11:22 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73812-2000.03.26-23.08.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I am pretty happy with the 1.08.0 Release. I have the rain guage support working as well as the DS18S20 support.

For the rain guage, all I have now is the three readings (today, yesterday, and user-reset). I got the user value in flash as I had mentioned earlier today. The data has been added to the APRS and Peet formats. The Peet has a cumulative as well as "since midnight" setting, so both are included.

DS18S20 support was easy. After studying the specs for a while, it appears the only thing I needed to worry about was the conversion time. According to the specs the typical conversion time is 200ms, but worst-case is 750ms. I upped the conversion time to just under 800ms. Russ, this probably explains why your tests mostly worked, you stayed under the 500ms I had allocated as long as you had a really strong dedicated supply.

I don't know of anyone that has a rain guage other than Russ, so I'm not in a big hurry to release this version yet in case something else comes along. My immediate concern is to get the rain guage and a Russ's temperature shielded weather sensor outside so I can start broadcasting data from my house. I have most of the goodies lined up, I just need to figure out how to get the stuff mounted nicely. I'm going from the one sensor unit on a fence to three sensor units (wind, seperated temperature and rain) hopefully on the roof or something less obstructed.

Website updates are next, then on to data logging.

Note that I will be out most of next week. I take off Tuesday on an international business trip and won't be back until midnight Sunday. I'll be LOS email-wise starting Monday night 4/3 through Monday night 4/10.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] Re: Rain sorta working

From: "Aaron" <ae4ko@amsat.org>
Date: Mon, 27 Mar 2000 09:17:40 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73876-2000.03.27-08.16.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Folks:
[...]
> 1) When running the wind/temperature setup, that routine checks to see
> if there are two counters on the bus. [...] If there are two, it

> asks the user to unplug the rain guage before allowing the user to
> continue. Once there is only one, the setup continues as normal.
>
[...]
> The above routines should not require climbing poles as long as the
> user sets things up in the correct sequence. It also allows
> re-running setup routines if needed without messing up the other
> sensor. I think it is OK unless someone can shoot holes in it.
>

As I already have my rain guage up the pole, I can't see how I can
prevent from going back up with the process you described. Is
there a way to "force" the ID's? Perhaps show both and pick one?
from a header file while programming?

Also, what happens if both sensors have to be setup again after
installation? I can see where someone will setup the wind and rain
guage as described, put them up the pole, and then (either
deliberately or accidentally; users will be users) re-run the setup.

Some of these issues might be satisfied when I get the kit together
and start playing with it (I am waiting for it to arrive -- it should be
today or tomorrow based on Steve B's message)

> I have basically added another status screen to scroll through that
> shows the rain since midnight, rain yesterday, and rain since reset.
>
> will
>

Sounds good. Monthly total would be nice, but I know that would
be impractical given how the uP keeps time; Besides that kind of
thing is probably more suited to computerized data collection
(Don't you love how I talk myself out of features? <grin>)

73
Aaron
Orlando, FL

(Random Quote)
    Bagpipes (n): an octopus wearing a kilt.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

82. [wxsig] Re: For future reference

From: "Aaron" <ae4ko@amsat.org>
Date: Mon, 27 Mar 2000 09:43:58 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73883-2000.03.27-08.42.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Folks:
>
> While messing with the rain guage this eveing, I tried putting a
> telephone double-adapter on the back connector. It don't work so
> good.

FWIW dept:

Another adapter that didn't work at all for me is an inline connector
(Designed to connect to phone cables together to get a longer
run).

(Random Quote)
Yoda of Borg I be...Assimilated you will be...Futile resistance is...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

83. [wxsig] Re: For future reference

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 27 Mar 2000 10:09:49 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73888-2000.03.27-09.09.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron,

I think the reason it didn't work is that the adapter swapped the lines. We need to make mention in the operations manual the different kinds of phone cable and couplers to be aware of. If you were to get a couple that did not swap, or made a cable that swapped the lines back after the coupler, it may work.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Aaron
> Sent: Monday, March 27, 2000 9:44 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: For future reference
>
>
> > Folks:
> >
> > While messing with the rain guage this eveing, I tried putting a
> > telephone double-adapter on the back connector. It don't work so
> > good.
>
> FWIW dept:
>
> Another adapter that didn't work at all for me is an inline connector
> (Designed to connect to phone cables together to get a longer
> run).
>
>
> ---
> (Random Quote)
> Yoda of Borg I be...Assimilated you will be...Futile resistance is...
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

84. [wxsig] Re: For future reference

From: "Aaron" <ae4ko@amsat.org>
Date: Mon, 27 Mar 2000 10:34:21 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73890-2000.03.27-09.33.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Aaron,
>
> I think the reason it didn't work is that the adapter swapped the
> lines. We need to make mention in the operations manual the different
> kinds of phone cable and couplers to be aware of. If you were to get
> a couple that did not swap, or made a cable that swapped the lines
> back after the coupler, it may work.
>
> - Steve
>

I'll have to go back and check the pinouts, but I don't _think_ it swapped anything. It was designed for making a longer cable out of a couple of "small" cables. I tried it between the cable I ran up the pole (which works) and the curly cable that came with the kit into the db9 adapter. The find_devices application I have for Linux was not happy at all; remove the adapter and the curly cable and everything is ok.

I do have a couple more of those things around -- I'll have to try
them out as well.

(Random Quote)
The earthling has stolen the space modulator!
  -- The Martian

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

85. [wxsig] Re: Long calibration runs

From: Guy Story <kc5goi@tapr.org>
Date: Mon, 27 Mar 2000 13:01:27 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73932-2000.03.27-13.02.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, that was using the pc software. I should have mentioned that. I do
believe the magnet was too far out. I will be finishing the kit this week
and hope to have it online friday night or saturday.

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

86. [wxsig] Re: For future reference

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 27 Mar 2000 17:18:11 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73977-2000.03.27-18.18.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron wrote:

> > Folks:
> >
> > While messing with the rain guage this eveing, I tried putting a
> > telephone double-adapter on the back connector. It don't work so
> > good.
>
> FWIW dept:
>
> Another adapter that didn't work at all for me is an inline connector
> (Designed to connect to phone cables together to get a longer
> run).
>

Remember that some of these connectors cross-over, i.e. interchange pins 3
& 4, and some do not.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

87. [wxsig] Assembly and Operations Manuals

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 27 Mar 2000 22:08:05 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73997-2000.03.27-21.08.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was hoping that I would find time to update the Assembly and Operations Manual for the beta testers. Alas, other priorities keep interfering.

Aaron emailed me and he now has his kit. I've emailed him the draft manuals that we have.

I generally pleased with the Assembly Manual. The one thing that lacks in it is how to put together the LCD cable and connect the LCD to the kit. In very general terms, here's how...

- The 1x17 male header needs to have one of the pin trimmed off to make it a 1x16 header.

- Position the 1x16 male header such that the pins stick out the back of the LCD (the opposite side of the LCD display). Solder the 1x16 male header to the row of holes in the top of the LCD (a picture would help show you where. Trust me, there's only one row of holes :-).

- To assembly the cable, separate the wires on the end of the cable without a connector approximately 1 to 1-1/2".

- Strip the insulation off the ends of the wires approximately 1/8".

  NOTE: There are two types of crimp pins in the kit. 16 pins with a gold color and 2 with a dull silver color. Separate this pins and set aside the dull silver pins for later steps. The 16 gold colored pins will be used now.

- Crimp a female pin to the end of the wires. Note that the ribbon cable has 14 conductors. Crimping can be down with a crimp tool or a pair of needle nose pliers. If you crimp the pins with needle nose pliers, it is best that you solder the pin to the wire using a very small amount of solder. You do not want to fill the connector pin with solder. (The crimp tool can be order from Jameco.)

- Next you will insert the pins into the connector housing. Read the following directions carefully and make certain you understand them before proceeding.

  - Note, the housing is a 17-pin housing. You want to instert the pins into the first 14 places. You can start from either end of the housing, simply label that end as pin 1.

  - To locate pin 1 on the rainbow colored ribbon cable, look at the 2x7 IDC connector on the end. There is a small arrow that points toward the connector end and points to pin 1. Typically, for a rainbow colored cable, pin 1 is the color brown. On grey cables, it is the red stripe.

  - Insert the connector on the wire of pin 1 into the 17-pin connector housing at one end. Label this end as pin 1. This will mate with the LCD display header pin 1. (a picture would help here). Insert the pin into the connector where the open side of the pin fits toward the connector housing tab. The tab holds the pin in place. Insert the pin all the way in until the tab locks onto the pin.

  - Continue inserting the wires one at a time, move to the next pin and wire side-by-side. (picture)

  - When all 14 pins have been inserted, there will be 4 open spaces in the connector housing at the opposite end where you started (pin 1).

  - Locate the red and black wire in the kit (sorry, not in the beta kits. Find some 28 guage wire, preferably different colors).

  - At this point you should have 2 gold colored pins and 2 dull silver pins. Crimp a gold colored pin on one end of the red wire and black wire. Solder.

  - On the opposite end of the red and black wire, crimp the dull silver pins. Solder.

  - Insert the red wire, gold color pin into the 17-pin connector housing at position 15, right next to the last wire on the ribbon cable.

  - Insert the black wire, gold colored pin into the 17-pin connector housing at position 16, right next to the red wire.

  - Insert the red wire, dull silver pin into the polarized 2-pin Molex connector according to the figure (need to draw figure - looking at the end

of the connector where the pins go in, and place the fins down, the red wired pin goes to the right. The goal here is that the connector plugs into the PCB that the polarity match the silk screen.)

  - Insert the black wire, dull silver pin into the polarized 2-pin Molex connector according to the figure (goes to the left).

  WARNING: Make certain that the polarized Molex connects to the PCB such that tthe red wire goes toward the silkscreened "+" sign.

  - At this point, the 17-pin connnector has one open connector position. This is okay. Plug the connector into the LCS matching pin 1 on the connector to pin 1 on the LCD (need a picture).

  - Plug the polarized molex into J8. OBSERVE POLARITY, RED TO "+". RED ON THE LCD GOES TO PIN 15.

That's it in a nut shell. Lots of words to explain a short process. Pictures will help. Please let me know how these work for you and how to make them better. We'll fold these steps into the assembly manual as soon a possible.

This connector was the best we could find. If you know of a better system, please let us know.

Any questions, ASK! We want to avert a disaster. The directions need to do that the best that they can.

The ops manual still needs work and I'll try to get to it. I have lots of notes to move it along. If I can only find the time :-)

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

88. [wxsig] Re: Assembly and Operations Manuals

From: John Koster <w9ddd@tapr.org>
Date: Mon, 27 Mar 2000 21:23:05 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-73999-2000.03.27-21.22.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gee, I guess you were getting vibrations from the Texas area this evening? I think this answers all the questions that came to mind when I opened the mail this evening.

Did the rest of the male moles connectors come in? If not, I can look here locally when I get back from Houston.

John Koster, W9DDD
<w9ddd@tapr.org>

On Mon, 27 Mar 2000, Steven R. Bible wrote:

> I was hoping that I would find time to update the Assembly and Operations
> Manual for the beta testers. Alas, other priorities keep interfering.
>
> Aaron emailed me and he now has his kit. I've emailed him the draft manuals
> that we have.
>
> I generally pleased with the Assembly Manual. The one thing that lacks in
> it is how to put together the LCD cable and connect the LCD to the kit. In
> very general terms, here's how...
>
> - The 1x17 male header needs to have one of the pin trimmed off to make it a
> 1x16 header.
>
> - Position the 1x16 male header such that the pins stick out the back of the
> LCD (the opposite side of the LCD display). Solder the 1x16 male header to
> the row of holes in the top of the LCD (a picture would help show you where.
> Trust me, there's only one row of holes :-).
>
> - To assembly the cable, separate the wires on the end of the cable without

> a connector approximately 1 to 1-1/2".
>
> - Strip the insulation off the ends of the wires approximately 1/8".
>
>   NOTE: There are two types of crimp pins in the kit. 16 pins with a gold
> color and 2 with a dull silver color.   Separate this pins and set aside the
> dull silver pins for later steps. The 16 gold colored pins will be used
> now.
>
> - Crimp a female pin to the end of the wires. Note that the ribbon cable
> has 14 conductors. Crimping can be down with a crimp tool or a pair of
> needle nose pliers. If you crimp the pins with needle nose pliers, it is
> best that you solder the pin to the wire using a very small amount of
> solder. You do not want to fill the connector pin with solder. (The crimp
> tool can be order from Jameco.)
>
> - Next you will insert the pins into the connector housing. Read the
> following directions carefully and make certain you understand them before
> proceeding.
>
>   - Note, the housing is a 17-pin housing. You want to instert the pins
> into the first 14 places. You can start from either end of the housing,
> simply label that end as pin 1.
>
>   - To locate pin 1 on the rainbow colored ribbon cable, look at the 2x7 IDC
> connector on the end. There is a small arrow that points toward the
> connector end and points to pin 1. Typically, for a rainbow colored cable,
> pin 1 is the color brown. On grey cables, it is the red stripe.
>
>   - Insert the connector on the wire of pin 1 into the 17-pin connector
> housing at one end. Label this end as pin 1. This will mate with the LCD
> display header pin 1. (a picture would help here). Insert the pin into the
> connector where the open side of the pin fits toward the connector housing
> tab. The tab holds the pin in place. Insert the pin all the way in until
> the tab locks onto the pin.
>
>   - Continue inserting the wires one at a time, move to the next pin and
> wire side-by-side. (picture)
>
>   - When all 14 pins have been inserted, there will be 4 open spaces in the
> connector housing at the opposite end where you started (pin 1).
>
>   - Locate the red and black wire in the kit (sorry, not in the beta kits.
> Find some 28 guage wire, preferably different colors).
>
>   - At this point you should have 2 gold colored pins and 2 dull silver
> pins. Crimp a gold colored pin on one end of the red wire and black wire.
> Solder.
>
>   - On the opposite end of the red and black wire, crimp the dull silver
> pins. Solder.
>
>   - Insert the red wire, gold color pin into the 17-pin connector housing at
> position 15, right next to the last wire on the ribbon cable.
>
>   - Insert the black wire, gold colored pin into the 17-pin connector
> housing at position 16, right next to the red wire.
>
>   - Insert the red wire, dull silver pin into the polarized 2-pin Molex
> connector according to the figure (need to draw figure - looking at the end
> of the connector where the pins go in, and place the fins down, the red
> wired pin goes to the right. The goal here is that the connector plugs into
> the PCB that the polarity match the silk screen.)
>
>   - Insert the black wire, dull silver pin into the polarized 2-pin Molex
> connector according to the figure (goes to the left).
>
>   WARNING: Make certain that the polarized Molex connects to the PCB such
> that tthe red wire goes toward the silkscreened "+" sign.
>
>   - At this point, the 17-pin connnector has one open connector position.
> This is okay. Plug the connector into the LCS matching pin 1 on the
> connector to pin 1 on the LCD (need a picture).
>
>   - Plug the polarized molex into J8. OBSERVE POLARITY, RED TO "+". RED ON
> THE LCD GOES TO PIN 15.
>
>
> That's it in a nut shell. Lots of words to explain a short process.

> Pictures will help. Please let me know how these work for you and how to
> make them better. We'll fold these steps into the assembly manual as soon a
> possible.
>
> This connector was the best we could find. If you know of a better system,
> please let us know.
>
> Any questions, ASK! We want to avert a disaster. The directions need to do
> that the best that they can.
>
> The ops manual still needs work and I'll try to get to it. I have lots of
> notes to move it along. If I can only find the time :-)
>
> - Steve
>
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

89. [wxsig] Sensors and cables

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 27 Mar 2000 20:36:15 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74004-2000.03.27-21.31.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

Aaron: Ugh! I had hoped the rain guage would be more accessible than the
wind/sensor guage. I was also hoping that maybe each had a seperate cable
down to the display unit. I guess that may not be a good assumption. I
can show both IDs and let the user pick, but that assumes the user knows a
lot about the sensors and has some way of distinguishing them. The best I
could offer without being able to discomnnect sensors is a way of showing
the counts for both and based off seeing different counts, let them pick
which sensor is which (Russes idea).

Aaron: Whenever the user selects a sensor re-setup, I do confirm with them
first before entering into the real setup routine. I'm hoping this will
reduce accidental erasures.

Aaron: Rain counts such as monthy, etc arn't too bad. It is the ones that
require sliding scales that are nasty. I'm going to make resetting the
user-rain reference as easy as possible.

Aaron: OK, I guess there are folk besides Russ and I with rain guages.
 Lemme get a bit of time on it to convince myself it is reasonably stable
and I'll go ahead and relese it.

All: The inline connectors are almost guaranteed to be signal swappers.
 If you took the connectors from two cables and faced them together as they
would be connected in an inline connector, you will see that they are
crossed. For those inline connectors to not cross the lines, they would
need to cross the four wires inside the connector. Un-necessary added cost
as most telephones don't need it. If you really want a connector that
doesn't cross the lines, get a double adapter and only use the two "output"
connectors.

All: A good double-check of the connector is to add a second one that
should hopefully swap it back.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place

Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

90. [wxsig] Re: Sensors and cables

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Mon, 27 Mar 2000 23:55:11 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74046-2000.03.27-22.54.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 27 Mar 2000, at 20:36, William Beals wrote:

> All:
>
> Aaron: Ugh! I had hoped the rain guage would be more accessible than
> the wind/sensor guage. I was also hoping that maybe each had a
> seperate cable down to the display unit. I guess that may not be a
> good assumption. I can show both IDs and let the user pick, but that
> assumes the user knows a lot about the sensors and has some way of
> distinguishing them. The best I could offer without being able to
> discomnnect sensors is a way of showing the counts for both and based
> off seeing different counts, let them pick which sensor is which
> (Russes idea).
>

I took advantage of the dual jacks inside the main housing for two
reasons. First was the fact that mounting the rain bucket up on the
pole gives me a better "view" for catching water (i.e. no
obstructions), and secondly, I could only fit one more cable
throught the hole in the wall <grin>.   If I put anything more up there
(perhaps a thermocron or humidity sensor if/when they ship), I'll
have to fabricate an expansion box or something (probably have to
be powered, too.) to accomodate the new stuff.

On a personal level, I know the ID's of all of the sensors up there (I
wrote them down), so I could key them in an init file, or source
code, or whatever if necessary.   Perhaps a way to save and load
sensor ID's to/from a binary or text file might be helpful (especially
from a development/debug perspective esp. if you lose those ID's
during a reset or reprogram). It all depends on how big a problem
this will be and how much code space is available and whether
code space can be justified in the first place. Just a thought.

> Aaron: Whenever the user selects a sensor re-setup, I do confirm with
> them first before entering into the real setup routine. I'm hoping
> this will reduce accidental erasures.

That helps. Users will find a way, though <grin>   I just received the
kit today, so knowledge of operational behavior is (to this point)
sparce at best. I'll get back to you on this one...

>
> Aaron: Rain counts such as monthy, etc arn't too bad. It is the ones
> that require sliding scales that are nasty. I'm going to make
> resetting the user-rain reference as easy as possible.

My reasons for monthly are three-fold: 1) I don't always remember
to look at my displays on a daily basis to see what happened
yesterday. 2) I can easily compare my totals to that of the NWS
reports on the evening news or Weather Channel. 3) It's a quick
and dirty way to see if I need to add water to the lawn; I have a
"water only when needed, but deep soak when you do" philosophy
which means I'll water once a week at most -- monthly totals are
great to answer the if/when/how much questions.

As I mentioned before, these sorts of things may be best served by
those with a host computer to crunch things like this. An
additional counter for a monthly total is easy, but then you have to
start keeping track of things like what day is it? Is it a new month?
Is it a leap year (February may have 29 days after all)? It's things
like this that can start eating up code space; unless, of course,
there is something already in place to do some of this.

>
> Aaron: OK, I guess there are folk besides Russ and I with rain
> guages.
> Lemme get a bit of time on it to convince myself it is reasonably
> stable
> and I'll go ahead and relese it.

I can understand that... I guess the thing to remember is that I have
another test bed for the software; and I live in Central Florida which
(as you know) gets frequent showers -- and quite heavy at times. I
just hope we get some -- preditctions are for a dry spring.

> will
>

73
Aaron

Random Quote:

Assembler Command: CFP: Change and Forget Password

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

91. [wxsig] Re: Assembly and Operations Manuals

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 28 Mar 2000 08:06:35 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74080-2000.03.28-07.06.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Gee, I guess you were getting vibrations from the Texas area this
> evening? I think this answers all the questions that came to mind when
> I opened the mail this evening.
>
>
> Did the rest of the male molexs connectors come in? If not, I can look
> here locally when I get back from Houston.

No, they are still on back order from Digi-Key. I haven't taken the time to
look elsewhere, i.e., Mouser, et al.

If you find some that would be great.

The Molex number is 22-23-2021 (Digi-Key WM4200-ND).

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

92. [wxsig] RE: Sensors and cables

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 28 Mar 2000 08:09:00 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74081-2000.03.28-07.08.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Aaron: OK, I guess there are folk besides Russ and I with rain guages.
> Lemme get a bit of time on it to convince myself it is reasonably stable
> and I'll go ahead and relese it.

I ordered a rain guage yesterday :-).

Didn't want you to have all the fun. Besides, it's getting into the rainy
season, not to mention hurricane season (June 1st).

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

93. [wxsig] Re: Sensors and cables

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 28 Mar 2000 08:12:27 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74082-2000.03.28-07.12.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> > Aaron: OK, I guess there are folk besides Russ and I with rain
> > guages.
> > Lemme get a bit of time on it to convince myself it is reasonably
> > stable
> > and I'll go ahead and relese it.
>
> I can understand that... I guess the thing to remember is that I have
> another test bed for the software; and I live in Central Florida which
> (as you know) gets frequent showers -- and quite heavy at times. I
> just hope we get some -- preditctions are for a dry spring.

I tell you what we need, a lightning detector. If interested, I have lots
of references.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

94. [wxsig] New Member and other news

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 28 Mar 2000 08:26:58 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74088-2000.03.28-07.28.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I've added Gerald Marchant, WB5NZV to the list.

Now I am down to three beta kits left.

Russ emailed me, he has his kit now. I emailed him the manuals.

I have left to put into the mail

  - 2 LCDs to Russ
  - 1 LCD to Doug
  - kit to Jim
  - kit to Gerald

One part that is missing in the beta kits is a 2-pin male polarized Molex
connector (J8). Digi-Key has them on backorder with an expected ship date
of 4/28/00. In the mean time, a regular two-pin header will work. You have
to be careful of the fact that this connects DC voltage to the LCDs LED
backlight. Thus it is polarity sensitive. If you install a regular 2-pin
header, be careful to plug in the correct way, positive to the silkscreen
"+" on the PCB.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

95. [wxsig] Extended Temp LCDs

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 28 Mar 2000 13:37:37 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74133-2000.03.28-12.37.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The beta kits are coming with LCDs that are extended temperature. What this
means is that the contrast pin of the LCD (pin 3) needs a negative voltage.

The problem is that when we designed the T238, we did not account for this.
Thus there is a "blue-wire" change needed to the T238 to accomidate this.

First, the trace between V1 pin 3 and J7 pin 1 needs to be cut. See
t238lcd1.gif (Top view of PCB) for the location of the cut. Becareful as
the trace is very close to another that you do not want to cut.

Second, solder a wire between U4 pin 6 and V1 pin 3. See t238lcd2.gif
(Bottom view of PCB) for the location of the wire.

This mod steals -8V DC from the MAX232 chip and applies it to one side of
the contrast pot. Center the pot prior to power on. The voltage from the
wiper of the pot will need to be approximately -0.5V to get a good contrast
setting on the LCD.

- Steve, N7HPR
[Attachment: t238lcd1.gif; image/gif; 14,547 bytes]
[Attachment: t238lcd2.gif; image/gif; 31,824 bytes]

96. [wxsig] Re: New Member and other news

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Tue, 28 Mar 2000 16:04:20 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74166-2000.03.28-15.04.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 3/28/00 8:26 AM, Steven R. Bible at srbible@gate.net wrote:

> I've added Gerald Marchant, WB5NZV to the list.
>
> Now I am down to three beta kits left.
>
> Russ emailed me, he has his kit now. I emailed him the manuals.
>
> I have left to put into the mail
>
> - 2 LCDs to Russ
> - 1 LCD to Doug
> - kit to Jim
> - kit to Gerald
>
> One part that is missing in the beta kits is a 2-pin male polarized Molex
> connector (J8). Digi-Key has them on backorder with an expected ship date
> of 4/28/00. In the mean time, a regular two-pin header will work. You have
> to be careful of the fact that this connects DC voltage to the LCDs LED
> backlight. Thus it is polarity sensitive. If you install a regular 2-pin
> header, be careful to plug in the correct way, positive to the silkscreen
> "+" on the PCB.

 mine arrived today was well ... and its raining like hell. I may just go
for the rain gauge myself ... at $39.95 that isn't very much to add, now id
we can just get a One-wire based barometric sensor that doesn't cost an arm
and a leg!

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

97. [wxsig] Web page schematic

From: "Aaron" <ae4ko@amsat.org>
Date: Tue, 28 Mar 2000 17:23:25 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74167-2000.03.28-16.22.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I went to the web page to make a hard copy of the schematic for
reference when assembling the kit, and I noticed that the pdf only
has one page, but the label block shows "Sheet 1 of 2"

I assume (you all know what that means <grin>) that sheet 2 is the
board layout and not something important (hehe).

Planning on starting assembly tonight...

Aaron

(Random Quote)
FOR SALE: Programming manuals. Must C to appreciate.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

98. [wxsig] RE: Web page schematic

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 28 Mar 2000 17:49:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74171-2000.03.28-16.49.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If that's the TAPR schematic, page 2 shows the cable to a front panel. It
also needs to include wiring details of the LCD cable (John K, hint hint).

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Aaron
> Sent: Tuesday, March 28, 2000 5:23 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Web page schematic
>
>
> I went to the web page to make a hard copy of the schematic for
> reference when assembling the kit, and I noticed that the pdf only
> has one page, but the label block shows "Sheet 1 of 2"
>
> I assume (you all know what that means <grin>) that sheet 2 is the
> board layout and not something important (hehe).
>
> Planning on starting assembly tonight...
>
> Aaron
>
> ---
> (Random Quote)
> FOR SALE: Programming manuals. Must C to appreciate.
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

99. [wxsig] Re: [aprssig] RE: PEET with Baro

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 28 Mar 2000 18:52:12 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74189-2000.03.28-19.52.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Joe B. Dorn" wrote:

>
> I purchased the U2K and Unimount last year and have had problems with almost

> every piece except the wind vane. I have had to do two exchanges on the
> Unimount (humidity sensor and rain gauge parts) in an uncomfortable position
> on my roof. The Console unit was replaced because of a reading malfunction.
> If it weren't for its applicability to APRS, I would probably take it to a
> swap fest...

Hi Joe,

The weather station item discussed in the web page below is in beta test right
now and will be available as a TAPR kit shortly if our testing is successful.

http://ourworld.compuserve.com/homepages/wmbeals/

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

100. [wxsig] APRS database

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 28 Mar 2000 20:15:31 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74206-2000.03.28-21.15.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve D,

For the past couple of days, I've noticed that my weather data is not in
the APRS database, but my weather data is on aprserve. About 4 days
ago, my weather data from the 1-Wire station was in the data base, but
not recently. I haven't changed anything (that I'm aware of anyway).
Is there something that I have to do?

Russ
kb0tvj

weather station is kb0tvj-5

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

101. [wxsig] Re: APRS database

From: Steve Dimse <sdimse@netrox.net>
Date: Tue, 28 Mar 2000 23:58:19 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74218-2000.03.28-22.58.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/28/00 10:15 PM Russ Chadwick (kb0tvj@bouldernews.infi.net) wrote:

>For the past couple of days, I've noticed that my weather data is not in
>the APRS database, but my weather data is on aprserve. About 4 days
>ago, my weather data from the 1-Wire station was in the data base, but
>not recently. I haven't changed anything (that I'm aware of anyway).
>Is there something that I have to do?
>
Hmmm, that is really weird. There is no data from you in the database at
all, in any of the tables, including the raw table. No weather reports,
and no positions either. I can't figure out why this would be...

I'll have to look at this...I am sure though the problem isn't you...

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

102. [wxsig] Lotsa replies and comments

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 28 Mar 2000 22:08:52 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-74220-2000.03.28-23.15.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Aaron (and everyone): Remember that if you do software updates the "normal" way using the MON08 program, then you will not lose any of your ID settings. That downloader ONLY earases the application, not the stored data. For the folk that want to use the P&E tools, I am going to assume you are reasonably smart and can also use those tools to read the programmed IDs an stuff them in the wireids.asm file so that when you have to erase everything (including IDs) and reprogram the micro, you can also restore your IDs. What I should do is write some explicit instructions on how to do this. For most of you, I am hoping a quick look at that assembly file will give you a really good clue on how to do it as that is exactly what I do for my IDs. Acknoledged though, a dedicated program to do this automatically would be very nice. It is alas on a longer-term task-list.

Aaron: I will look seriously at adding monthly rain totals. It will be RAM-based, so the data would get lost if there was a power interruption. I am very nervous about automated flash erasing and such, I'd like that to be exclusively user-initiated.

All: Looks like lots of interest in the rain guage support. Weather station work during the week is difficult due to a 6am-9pm job (Russ hears me whine all the time on two meters). I will release that code one way or 'tuther before going to France next week.

Steve: The ligtning detector sounds really fun... Long term list.

Gerald: Welcome to the group!

All: Russes not-so-well-received comments about using the dedicated +5V line are pretty scary. Good news on our part I guess is that disconnecting +5V from the cable is really easy if needed. All we have to do is remove the ferrite and no +5V.

Steve: The rework for the extended temperature LCD doesn't look too bad! I'll implement when I get my displays.

Aaron: The mysterious second sheet actually refers to another PCB that hasn't been made yet. When (if) we got to a weather station that includes a chassis, that second sheet is the button/LED board. Work on it has been postponed until later.

Russ: There is a good chance I may get to "test" a satellite-based always-on internet connectivity system my company will start selling later this year. If that is the case, my dreams of being Denvers igate may become reality. It will be at the cost of considerable power usage (satellite receiver AND TRANSMITTER) along with leaving a computer up all the time. Small price to pay for cool toys though. Garboons of bandwidth and my own IP address.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

103. [wxsig] Task list

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 28 Mar 2000 22:20:59 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74221-2000.03.28-23.15.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I am happy that I am pretty much being given free reign on what I think are
the priorities for this project, but am willing to at least discuss them.
 Below is my list of things to do. This is a text file I keep with the
source code.

"Short term" means part of the next release (1.08 in this case)
"Long term" means things I am definitely going to do and the rough order I
plan on doing it.
"Maybe" is pie in the sky stuff I havn't even thought about yet and may not
even do.

Any major holes?

To Do (Short Term):
==========
Monthly rain.

To Do (Long Term):
==========
20x4 support.
Data logging with DS1993
Metric support
Russ's multi-day format (DS1993 required)
MON08 port to Windows (VC++)
MON08 Better ID capture

To Do (Maybe):
==========
Barometric Pressure (need sensor)
Humidity (need sensor)
Indoor temperature
Ligtning detector

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

104. [wxsig] Re: APRS database

From: Steve Dimse <sdimse@netrox.net>
Date: Wed, 29 Mar 2000 06:52:40 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74243-2000.03.29-05.52.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/28/00 11:58 PM Steve Dimse (sdimse@netrox.net) wrote:

>>For the past couple of days, I've noticed that my weather data is not in
>>the APRS database, but my weather data is on aprserve. About 4 days
>>ago, my weather data from the 1-Wire station was in the data base, but
>>not recently. I haven't changed anything (that I'm aware of anyway).
>>Is there something that I have to do?
>>
>Hmmm, that is really weird. There is no data from you in the database at
>all, in any of the tables, including the raw table. No weather reports,
>and no positions either. I can't figure out why this would be...
>
>I'll have to look at this...I am sure though the problem isn't you...
>
OK, now I'm totally baffled. Soon after I sent the message to you, about
0012 EST, the system started accepting data from you. It all seems fine.

I did nothing to the system other than query it for your info.

Bizarre...

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

105. [wxsig] Re: Lotsa replies and comments

From: John Koster <w9ddd@tapr.org>
Date: Wed, 29 Mar 2000 08:05:49 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74253-2000.03.29-08.05.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> All: Russes not-so-well-received comments about using the dedicated +5V
> line are pretty scary. Good news on our part I guess is that disconnecting
> +5V from the cable is really easy if needed. All we have to do is remove
> the ferrite and no +5V.

Did I miss a message ? This isn't ringing a bell. But, yes you can
remove that "wire through the bead" to open the connection, and we also
have the option of directing the +5 to a different pin by installing the
wire/bead in the optional location.

> Aaron: The mysterious second sheet actually refers to another PCB that
> hasn't been made yet. When (if) we got to a weather station that includes
> a chassis, that second sheet is the button/LED board. Work on it has been
> postponed until later.

Actually it is just a wiring harness for remoting the PBs and LED. It
will also include the wiring harness for the LCD once I catch up with
Steve's wish list.

I am also quite interested in the rain gauge for the purposes of
regulating the yard sprinkler. Nothing more frustrating than waking up
and realizing that you had 1" of rain AND you sprinkled too. You can be
assured that the water you paid for just ran off. Soil here swells up on
the surface and keeps any large amount of rain from soaking in. Black
clay is one way to describe it.

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

106. [wxsig] Documentation Discrepancies/Comments

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Wed, 29 Mar 2000 16:40:01 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74307-2000.03.29-15.39.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I spent several hours examining the docs and schematics and here is my
harvest of things that I question ...

 In the email from Steve about wiring the LCD cable;

 "When all 14 pins are inserted, there will be 4 open spaces..." - my
arithmetic on a 17 pin connector is 17 - 14 = 3. Should that read "3 open
spaces" ???

In the T238 Assembly manual;

 - page 4 reads "(1) 4-40 x _" screw" - what is the "_" to mean "1/2 inch"
???

 - page 5 reads "R13 is a _ watt resistor" is that "_" 1/2 watt resistor ???

 - page 7 reads "L8 (normal or alternate)" - the schematic is at odds with
the PC Board layout and the T238 Operations manual diagram and chart for J2.

Do you define "normal" as using pin 5 or pin 1????

 - page 9 reads "...it using the 4-40 x _" screw..." - as above is this to
mean 1/2 inch???

 - page 12 reads in several spots about using the 'red stripe' to align the
LCD cable; since we are using rainbow ribbon you then would interpret it as
"brown stripe"

 - page 13 last paragraph in bold says "Congradulations," it should be
"Congratulations"

 In the T238 Operations Manual;

 - page 5, in the chart of the output modes, the thrid line "5-second liive
(Peet) the baudrate is specified as "9600" shouldn't that be "2400" ???

 - page 6, near the bottom, a bold paragraph header reads "5-Minute Live
(Computer) Mode:" shouldn't that be "5-Second Live..."

 - page 7, a bold paragraph header reads "5-Minute Live (Peet) Mode:" ... I
dunno, but what should that read ???

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

107. [wxsig] Re: APRS database

From: Steve Dimse <sdimse@netrox.net>
Date: Wed, 29 Mar 2000 21:53:28 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74356-2000.03.29-20.53.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/29/00 6:52 AM Steve Dimse (sdimse@netrox.net) wrote:

>OK, now I'm totally baffled. Soon after I sent the message to you, about
>0012 EST, the system started accepting data from you. It all seems fine.
>
After much grinding and gnashing of teeth, it looks like the problem is
in aprsd. I'm trying to sort that out with Dale, a hard one to track
down, but at least I know where the problem is...

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

108. [wxsig] Re: APRS database

From: Steve Dimse <sdimse@netrox.net>
Date: Wed, 29 Mar 2000 22:06:24 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74361-2000.03.29-21.06.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/29/00 9:53 PM Steve Dimse (sdimse@netrox.net) wrote:

>>OK, now I'm totally baffled. Soon after I sent the message to you, about
>>0012 EST, the system started accepting data from you. It all seems fine.
>>
>After much grinding and gnashing of teeth, it looks like the problem is
>in aprsd. I'm trying to sort that out with Dale, a hard one to track

>down, but at least I know where the problem is...
>
I'm an idiot. A little further reflection pointed out a misconfiguration
of aprsd. Everyone ought to be on there now!

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

109. [wxsig] Weather Station Data Quality

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 29 Mar 2000 21:25:02 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74369-2000.03.29-22.25.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

One of the projects where I work provides quality control of all of the
surface meteorological data that is used by the National Weather Service
in operational numerical weather prediction programs. The approach is
to acquire data from about 1500 surface stations across the lower 48
states, southern Canada, and northern Mexico. Then once each hour this
data is assimilated into a model. The data from that model is
interpolated to and compared with measured data from surface stations.
This process happens every hour and statistics of the differences
between the measurement and the assimilation are determined. These are
called differences rather than errors because the model can be in error
by as much as or more than the measurement. Criteria have been
developed for using these statistic to find sensors that need to be
replaced or adjusted.

Some time ago I approached the people who work on this project about
using ham weather station data in their project and got an underwhelming
response. However, recently I showed some of the people my weather
station data now available on the internet. I asked the question again
if they would be interested in this type of data and got somewhat better
response. Essentially, if I do all of the necessary programming to
acquire the data and put it in their format, they will add our stations
to the ones that are regularly and continuously being evaluated. Once a
week, they will give us a listing that would have the average difference
and r.m.s. difference for each of the parameters they test.

My approach will be to use the AFilter program (that can be run in front
of WinAPRS) as a way to log onto APRSserve and select out only those
packets from our weather stations. These packets would be passed to a
Perl program (to be written by my son) which would arrange the data into
the necessary format. This would be run continuously on my desktop
computer at work and then the data would be sent to the appropriate
place in our Central Facility. All of this is months away. Before I
would include anyone on the list of participating stations, I would get
their permission. I will have to build a meta-data file for each
station to include call, latitude, longitude, elevation.

I think that this would be a desirable thing and would certainly be an
indication of how good our data is. If the data is good and is also
reliable, it might find a wider use.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

110. [wxsig] Re: Weather Station Data Quality

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Wed, 29 Mar 2000 23:38:24 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74370-2000.03.29-22.38.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 29 Mar 2000, at 21:25, Russ Chadwick wrote:

[...]
> My approach will be to use the AFilter program (that can be run in
> front of WinAPRS) as a way to log onto APRSserve and select out only
> those packets from our weather stations. These packets would be

> passed to a Perl program (to be written by my son) which would arrange
> the data into the necessary format. This would be run continuously on
> my desktop computer at work and then the data would be sent to the
> appropriate place in our Central Facility.
>
[...]
> Russ
> kb0tvj

Another possibility for data acquisition is to have a front end for
Steve D's SQL database(could be a perl CGI, or even better, use
XML); they can then get whatever amount of data he has when they
need it and not have to have a computer with a 'dedicated'
connection to aprsserve.   Aren't databases great?

[Tangent thread] Steve, What's the daily bandwidth totals these
days on aprsserve?   To put it another way, how many years worth
of data to fill a hard drive?
[/Tangent]

73

Random Quote:

He's all sail and no boat.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

111. [wxsig] Re: Weather Station Data Quality

From: Steve Dimse <sdimse@netrox.net>
Date: Wed, 29 Mar 2000 23:41:09 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74371-2000.03.29-22.41.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/29/00 11:25 PM Russ Chadwick (kb0tvj@bouldernews.infi.net) wrote:

>
>My approach will be to use the AFilter program (that can be run in front
>of WinAPRS) as a way to log onto APRSserve and select out only those
>packets from our weather stations. These packets would be passed to a
>Perl program (to be written by my son) which would arrange the data into
>the necessary format. This would be run continuously on my desktop
>computer at work and then the data would be sent to the appropriate
>place in our Central Facility. All of this is months away. Before I
>would include anyone on the list of participating stations, I would get
>their permission. I will have to build a meta-data file for each
>station to include call, latitude, longitude, elevation.
>
Why would you use afilter and winaprs? A perl program can directly
connect to the server, and easily filter out the weather data. I'm going
to release my parser one of these days anyway, so when you want to work
on it let me know and I'll send you the latest version.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

112. [wxsig] Re: Task list

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 29 Mar 2000 21:44:56 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74376-2000.03.29-22.45.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> Below is my list of things to do. This is a text file I keep with the
> source code.
>
> Any major holes?
>
> To Do (Short Term):

> ============================
> Monthly rain.
>
> To Do (Long Term):
> ============================
> 20x4 support.
> Data logging with DS1993
> Metric support
> Russ's multi-day format (DS1993 required)
> MON08 port to Windows (VC++)
> MON08 Better ID capture
>
> To Do (Maybe):
> ============================
> Barometric Pressure (need sensor)
> Humidity (need sensor)
> Indoor temperature
> Ligtning detector
>

Maybe not everyone on the group knows that Dallas Semiconductor is developing a 1-Wire barometer. They haven't told us just how they are doing it or when it will be done, but it is being done. When it becomes available, that would be an important thing to move up the priority list.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

113. [wxsig] Re: Weather Station Data Quality

From: Steve Dimse <sdimse@netrox.net>
Date: Wed, 29 Mar 2000 23:57:36 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74378-2000.03.29-22.57.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3/29/00 10:38 PM Aaron Morrison (ae4ko@amsat.org) wrote:

>Another possibility for data acquisition is to have a front end for
>Steve D's SQL database(could be a perl CGI, or even better, use
>XML); they can then get whatever amount of data he has when they
>need it and not have to have a computer with a 'dedicated'
>connection to aprsserve. Aren't databases great?
>
It could also be done as real time storage, either way works.

>[Tangent thread] Steve, What's the daily bandwidth totals these
>days on aprsserve? To put it another way, how many years worth
>of data to fill a hard drive?

The raw feed is about 45 MB of data a day. The data is stored in raw form, plus timestamp, which grows the raw database about 50 MB/day. The first significant limit here is the 2GB/file limit of Linux, so the raw table would be limited to 40 days. For optimization, I will probably keep the last two weeks or so in the current table, and offload the data by week into stale data tables.

Then each type of data is parsed into its own table (position, weather report, message, status report, etc.), roughly another 50MB/day. There is lots of duplicate data I can filter to reduce this further. I still have about 22 GB free on the drive, so by disk space considerations I could probably handle more than half a year without any reduction. Stale data is static and can be compressed, and there are other tricks I can probably use as well. Still looking at less than a year of data...

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

114. [wxsig] Re: Lotsa replies and comments

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 29 Mar 2000 22:00:15 -0700

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74379-2000.03.29-23.00.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John Koster wrote:

> > All: Russes not-so-well-received comments about using the dedicated +5V
> > line are pretty scary. Good news on our part I guess is that disconnecting
> > +5V from the cable is really easy if needed. All we have to do is remove
> > the ferrite and no +5V.
>
> Did I miss a message ? This isn't ringing a bell. But, yes you can
> remove that "wire through the bead" to open the connection, and we also
> have the option of directing the +5 to a different pin by installing the
> wire/bead in the optional location.
>

John,

I recently sent a message to the Dallas Semi [weather] reflector reporting on my results with the new temperature sensor DS18S20 where it ran for a week without any errors. I pointed out that I had hooked up the third (optional) port to the +5v. Someone else responded that he thought this was a good idea. Very quickly, there was a post from Dan Awtrey of Dallas Semi that this would have some other effects. He said that having +5V on a wire that runs close to the 1-Wire data line would increase the capacitance of the line and this would decrease the maximum length of the bus that would allow low error rate operation.

I am running with 150 feet of cat 5 multi twisted pair network cable and haven't seen a problem. I plan on continuing to run with the +5V hooked up because it provides the power during temperature conversion and increases conversion speed. If I were to run 1000 feet of bus, I might see a problem, but I don't plan on that kind of length.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

115. [wxsig] Re: Weather Station Data Quality

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Thu, 30 Mar 2000 07:02:53 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74425-2000.03.30-08.03.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Dimse wrote:

> On 3/29/00 11:25 PM Russ Chadwick (kb0tvj@bouldernews.infi.net) wrote:
>
> >
> >My approach will be to use the AFilter program (that can be run in front
> >of WinAPRS) as a way to log onto APRSserve and select out only those
> >packets from our weather stations. These packets would be passed to a
> >Perl program (to be written by my son) which would arrange the data into
> >
> Why would you use afilter and winaprs? A perl program can directly
> connect to the server, and easily filter out the weather data. I'm going
> to release my parser one of these days anyway, so when you want to work
> on it let me know and I'll send you the latest version.
>

I would not use WinAPRS, just AFilter and the unwritten Perl program. The reason is that I'm not a programmer and have to talk others into doing any programming that I need. I can make AFilter do the first part of what I need and so that means less programming that I have to ask my son to do for me. If this were a sponsored task at work, I could get programming support there, but that's not the case.

If anyone has any suggestions, I'd be happy to listen. But recall that I don't have significant programming skills and this has to run on my desktop PC at work which runs Windows 95 and has a full time connection to the internet through a large in-house network. Furthermore, it has to run in real time because the checking of data is a real time activity. I originally approached the people who do this activity with the idea of downloading the necessary real time data to my computer at home and doing the comparisons of our archived data from the APRS data base once per week in an off-line mode.

They were not interested in helping me with that, however, they were
interested in adding our small data stream into the operation hourly run if I
could get it to them with no added programming on their part.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

116. [wxsig] Re: Lotsa replies and comments

From: John Koster <w9ddd@tapr.org>
Date: Thu, 30 Mar 2000 14:03:36 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74473-2000.03.30-14.03.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hmm, this reminds me of problems with cable length restrictions with my
former employer's access controls system which was based on iButtons.
The reader had a two color LED besides the actual contacts for reading the
button. They recommended using a 4 condutor low capacity shielded cable.
In retrospect I don't think that was the best choice. Should have run two
separate cables. Going out to the limit and having a working system on a
dry day almost guaranteed getting calls on damp days if you had any
conduit runs underground.

Now this brings me to another possible application. If I can make the
T328 read my access control button as well as everything else, and I can
wire a relay to an output on the processor, I can have it do a secure
garage door opener too. Since my yard sprinkler control is in the garage
(where I plan to interface the rain guage) everything will be close
together.

Wonder what the software implications are? Instead of polling for data,
you poll to see if it's there at all, and if it is, you pulse the output?
What about multiple access control buttons? Guess you just add another to
the poll table?

John Koster, W9DDD
<w9ddd@tapr.org>

On Wed, 29 Mar 2000, Russ Chadwick wrote:

> John Koster wrote:
>
> > > All: Russes not-so-well-received comments about using the dedicated +5V
> > > line are pretty scary. Good news on our part I guess is that disconnecting
> > > +5V from the cable is really easy if needed. All we have to do is remove
> > > the ferrite and no +5V.
> >
> > Did I miss a message ? This isn't ringing a bell. But, yes you can
> > remove that "wire through the bead" to open the connection, and we also
> > have the option of directing the +5 to a different pin by installing the
> > wire/bead in the optional location.
> >
>
> John,
>
> I recently sent a message to the Dallas Semi [weather] reflector reporting on my
> results with the new temperature sensor DS18S20 where it ran for a week without
> any errors. I pointed out that I had hooked up the third (optional) port to the
> +5v. Someone else responded that he thought this was a good idea. Very quickly,
> there was a post from Dan Awtrey of Dallas Semi that this would have some other
> effects. He said that having +5V on a wire that runs close to the 1-Wire data
> line would increase the capacitance of the line and this would decrease the
> maximum length of the bus that would allow low error rate operation.
>
> I am running with 150 feet of cat 5 multi twisted pair network cable and haven't
> seen a problem. I plan on continuing to run with the +5V hooked up because it
> provides the power during temperature conversion and increases conversion speed.
> If I were to run 1000 feet of bus, I might see a problem, but I don't plan on
> that kind of length.
>
> Russ
> kb0tvj

>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

117. [wxsig] MSAS URL

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Thu, 30 Mar 2000 18:45:48 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74520-2000.03.30-19.46.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yesterday I posted an item about quality of weather station data. I
described a project that measures the long term quality of surface
station data. That project is called MSAS and you can find out more
about it from this web site:

http://www-sdd.fsl.noaa.gov/MSAS/msas.html

The chances are good that I will be able to get our weather data into
the MSAS project. However, it won't be possible for a few months and is
not a sure thing at all.

Russ
kb0tvj

118. [wxsig] Replies

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 30 Mar 2000 21:03:26 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74536-2000.03.30-22.00.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

No email last night, I was not feeling good.

John: We do have the extra "expansion" header on the board, so if you
wanted to engergize a relay if "yesterdays rain was over 1 inch". If you
can come up with an easy decsion based on my currently stored data, the
interrupt-based scheduling system could handle an add-in that could twiddle
an I/O line. That I/O line could then drive the relay.

Brian: Thanks for the manual comments, I am in charge of the assembly
manual and will include them. I'm still waiting on Steve for the
operations manual.

Russ: Shouldn't we try to get the temperature sensors outside the case
before we corrolate to the NWS data. It probably won't look too good.
 Otherwise cool project.

Russ: I'll add the barometric presure (and probably at a fairly high
priority) when the sensor comes out.

John: I'm a bit confused on your second email and the need to poll stuff.
 I thought your primary purpose was to stop your sprinkler from sprinkling.
 I was thinking of something as simple as disconnecting the power to the
valve when you had enough rain. It sounds like you have much grander
ideas. Not sure where the garage door opener comes in.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

119. [wxsig] 1.08.0C

From: William Beals <wmbeals@compuserve.com>
Date: Fri, 31 Mar 2000 22:08:35 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74753-2000.03.31-23.03.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

The code ran reasonably well on my bench for several days, but I have not
been able to get around to getting my outdoor sensors upgraded. With this
weekends spring snowstorm, it isn't too likely I will be climbing on my
roof. I'll go ahead and post this code as a candidate release (not to the
website) so the folk who would like to start playing with rain guages may
do so.

This code does not yet include the monthly total or a smart-user way of
telling the rain sensor from the wind guage.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293


```
begin 600 Wx08.s19
M4S$Q,T9&1$,X,# P.# P-#@P,#@X,#!#.# Q,#@P,30X,#$X.# Q0T$Q#0I3
M,3$S1D9%0S@P,C X,#(T.# R.#@P,D,X,#,P.# S-#@P,S@X,#-#.3$-"E,Q
M,#=&1D9#.# T,$8P,# T1 T*4S$Q,T8P,#!#0T8P,#E#0T8Q0D5#0T8Q0T%#
M1$8P,3=#1$8P-$1#1#A!#0I3,3$S1C Q,$8Q-T%#1$8P.# R,#,R,T8P,#9%
M,#<P-#-&,#$V13@P,$,-"E,Q,3-&,#(P,#4V13 V,#(S1C V,T8P,S9%1D8P
M-S$P,49"-C Q031$0PT*4S$Q,T8P,S W.$$Q-C R-C$T038T,$(W,3-!-C!#
M0C<Q-$$V,#!"-SA&#0I3,3$S1C T,#$U038S,D(W,3E#1$8R03DX,3E#0T,X
M,#0T-#5&,#<V,T8-"E,Q,3-&,#4P0T1&,$8T0T1&,3)#,C1&-4$Q-3,R-C$S
M0T1&,3)#,C1"1 T*4S$Q,T8P-C!%0T$Q-#@R-C!!0T1&,3)#,C1%,T$Q,$0R
M-C Q.#%#1#@S#0I3,3$S1C W,$8Q,D,R-$0Y,C!&.34S-38S,3)%,S S,3)%
M,S P1# P.#4-"E,Q,3-&,#@P-D4X,#0X,T8T.4$V-3-#1$8Q,#%!-C0Q0T1&
M,3 Q0C9!00T*4S$Q,T8P.3 T.$-$1C$P-T(V-#E#1$8Q,#=!-C!$0T1&,3 Q
M0T1&,39"#0I3,3$S1C!!,#)#03$U,S(V-#E#1$8Q,D-!,30T,C8T,C-&-$5#
M1$8Q-$(-"E,Q,3-&,$(P-$8R-#-"0D4T13A#13<T,#-#-$5"-C1%03$P.#(V
M144Y- T*4S$Q,T8P0S!#1$8Q,D-"-S1%0T1&,3)#03$P1#(V,C)#1$8Q03$R
M-$5!#0I3,3$S1C!$,#$W0C8T.4%",#A"-S0Y0C8T.$$Y,#!"-S0X0C8T14$Q
M,3@-"E,Q,3-&,$4P-$0R-T$R03$U.#(V,#<X,30U1C!&,$-$1C!&-#(P1D4V
M0@T*4S$Q,T8P1C U,S0V,$0P,$8V,C<P.4(W,3@P1#$V1D1!1C Q,C!&-#A$
M#0I3,3$S1C$P,#@Q0C<Q.#!$,39&1#@Q.#<V,D$T,$8Y-SA#1#9&,3%#-C@-
M"E,Q,3-&,3$P041%1C@V030P1CDW1#9&,3%#041%-C@Q,S S,3,R,S-#,@T*
M4S$Q,T8Q,C S-#,U,S8S-S,X,SDV,38R-C,V-#8U-C8S1C1",T8T03)##0I3
M,3$S1C$S,#-&-$-"-C$V030R,#(V,3,S0S1",C9&-C-#-$$R-D8R,S8-"E,Q
M,3-&,30P,T,T0T(V-$-!,3 X,C9%031&.3@X,4(V,3@Y.3@Q0T0U0@T*4S$Q
M,T8Q-3!&,3)#,C0Q-4-$1C$V03(T,3 V,D(W-$9#1$8Q,D,R-#@S#0I3,3$S
M1C$V,# X0T1&,39!,C0P,T)"-$8Y.3@Q.$-!13!&1#%&,3%#1CD-"E,Q,3-&
M,3<P,C<P-35!,D%&.#DX.#$Y1CDY.#%#1$8Q.#<T1D-$,#%!1@T*4S$Q,T8Q
M.#!#,#(T,#$X,4-#1C!%.#0U,#%#,#,U-$$T-48Q1# W138X#0I3,3$S1C$Y
M,#1#.$(X.34U-$$U131#,S4T03@X.$$V-48R-#DR-D5&-T,-"E,Q,3-&,4$P
M.#$T-3 Q0S S-31!-#5&,C0Y-T4T0SA".#DU-31!-45&00T*4S$Q,T8Q0C T
M0S,U-$$X.#A!-C5&,D$Y,C9%1D-$,#%#,#@Q,S4T.$-$#0I3,3$S1C%#,$-$
M1C$X-T$V,#$Y0D-$,#%#,#@Q.4(S-30X0T-&,4$Q,D8-"E,Q,3-&,40P-$0R
M-C%#-D4X,#0X,T8T.4%$,34R-#$R-D4X,#0Y040P,@T*4S$Q,T8Q13 P13(T
M,$(S1C0Y,T,T.$(V-#A!,48P,C9%0CDY.#%!1#9"#0I3,3$S1C%&,#)&,C4R
M0T$V,#)#-T9%,#A#-D9&-T4U-30X1C=!-C!!.$8-"E,Q,3-&,C P040S1D$V
M,$%#-T9%,#A!-C Q040R.$$V,#A#-T9%,#@Y00T*4S$Q,T8R,3!!-C U040R
M1$$V,#!#-T9%,#A!-C Q040R-$%$,#$X,31"#0I3,3$S1C(R,#4U-#A&-C0S
M,C8P0D%&,#$Y1D(X-#E!,3@P,C9&,SDY0C -"E,Q,3-&,C,P.#$Y.#@Q-48X
M0T%&,#$V-3 S13@R-D8Y-$$R-D8T.$,S-@T*4S$Q,T8R-# X,3E$.40Y1#E$
```

```
M-$$R-D8Y.#%!-C Q0S=&13 X0S9&1D$R#0I3,3$S1C(U,#=%-34T.$8W038P
M04%$-#E!-C Y0S=&13 X038P-4%$,44-"E,Q,3-&,C8P-# U-30X,S4T030U
M,# T,#=%-$,X0C@Y-34T035%-$,Y,@T*4S$Q,T8R-S S-31!038Q14%$,D(X
M.#A!.49!-# W03$P,#(V13E!-D)$#0I3,3$S1C(X,# X0S=&13 X038P-4%$
M,3E!-C P0S=&13 X038P,4%$-D0-"E,Q,3-&,CDP,3 Y.3@Q-48X0T%&,#$V
M-3 S13@R-D8Y-$$R-D8T.$,T-@T*4S$Q,T8R03 X,3E$.40Y1#E$-$$R-D8Y
M.#$V13@P-$0S1C1"038R.$4X#0I3,3$S1C)",$-$1C)%.3-&-$1!-C(X0T1&
M,D4Y038Q-$-$1C)%.4$V.3@-"E,Q,3-&,D,P,$-#1$8R13E!-C V0T1&,D4Y
M038P,D-$1C)%.4$V,#$S0@T*4S$Q,T8R1#!#1$8R13DT-48S,D(S-30X,T8T
M0D$V.#!!1#!"040S-C4W#0I3,3$S1C)%,#-&-$)!-D,P040P,T%$,D4X,3DW
M0C8P-$%!1D5"-S T-D$-"E,Q,3-&,D8P.49!-$8P0D$T0D(W,# Q-C P-C(V
M,C$W,# S1#1$,C8W00T*4S$Q,T8S,# P1CE&-C)!-$8P0D$T0D(W,# Y1#$V
M,# V,C8R,3<P,#!"#0I3,3$S1C,Q,$$V,#)#1$8R.3,X,39%,#(T0D$V,31"
M-S1#-34T.$8V-C,-"E,Q,3-&,S(P048P,3,U-#A!1$,S,T$T0S(V1C,X,31$
M-D8V138Y-S0Q-0T*4S$Q,T8S,S V1C<R,C U-C8U-S(R,#,Q,D4S,#,Q,D4S
M,#0S,C U,T$W#0I3,3$S1C,T,#<T-C$W,C<T,C T1#1&-$4S,#,X,C V1C9%
M,C U,#0S1$,-"E,Q,#9&,S4P,D4R13)%,D,-"E,Q,3-&.# P,3 Q1D-!,C4P
M,# P,#!%03$R0T)"0S!!,# P,# P.3-"-@T*4S$Q,T8X,3 Q1#9#0S0P,# P
M,# P,#0P,# P,# P,# P,# P,# P,#4W#0I3,3$S1C@R,$9&1D9&1D9&1D9&
M1D9&1D9&,49&1D9&1D9&1D9&1D9&1C(-"E,Q,3-&.#,P1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&1D9$- T*4S$Q,T8X-#!&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&1D,T#0I3,3$S1C@U,$9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&0C0-"E,Q,3-&.#8P1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9!- T*4S$Q,T8X-S!&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1CDT#0I3,3$S1C@X,# Q,D9!,C8P,#,P,# P-D(P
M,3,R03(V,# S,# P,#=!,C(-"E,Q,3-&.#DP,#$R,T$R-C P,S P,# Q-C Q
M,C9!,C8P,#,P,# P1D1&0PT*4S$Q,T8X03 P,3)#03(V,# S,# P,#,R,#$S
M0D$R-C P,S P,#!%0T,S#0I3,3$S1CA",# Q,SA!,C8P,#,P,# P0C4P,3,U
M03(V,# S,# P,$9&,3<-"E,Q,3-&.$,P1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D8T- T*4S$Q,T8X1#!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1C,T#0I3,3$S1CA%,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&,C0-"E,Q,3-&.$8P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D8Q- T*4S$Q,T8Y,# P,# P,#!&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1C P#0I3,3$S1CDQ,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1C,-"E,Q,3-&.3(P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9%,PT*4S$Q,T8Y,S!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D0S#0I3,3$S1CDT,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&0S,-"E,Q,3-&.34P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9",PT*4S$Q,T8Y-C!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D$S#0I3,3$S1CDW,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M.3,-"E,Q,3-&.3@P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D8X
M,PT*4S$Q,T8Y.3!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1C<S
M#0I3,3$S1CE!,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&-C,-
M"E,Q,3-&.4(P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D8U,PT*
M4S$Q,T8Y0S!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1C0S#0I3
M,3$S1CE$,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&,S,-"E,Q
M,3-&.44P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D8R,PT*4S$Q
M,T8Y1C!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1C$S#0I3,3 V
M.# P,$-#.# T-T4V#0I3,3 V.# P-$-#.# T-T4R#0I3,3 V.# P.$-#.# T
M-T1%#0I3,3 V.# P0T-#.3(V0D$T#0I3,3 V.# Q,$-#.# T-T0V#0I3,3 V
M.# Q-$-#.# T-T0R#0I3,3 V.# Q.$-#.# T-T-%#0I3,3 V.# Q0T-#.# T
M-T-!#0I3,3 V.# R,$-#.# T-T,V#0I3,3 V.# R-$-#.# T-T,R#0I3,3 V
M.# R.$-#.# T-T)%#0I3,3 V.# R0T-#.# T-T)!#0I3,3 V.# S,$-#.# T
M-T(V#0I3,3 V.# S-$-#.#0U-4$P#0I3,3 V.# S.$-#.# T-T%%#0I3,3 V
M.# S0T-#.# T-T%!#0I3,3 V.# T,$-#.# T-T$V#0I3,3$S.# T-$-#.# T
M-S0U,#%"1CDT.$,S1C P0C8P-$$T,$9!03!%,$,-"E,Q,3,X,#4T0C<P-#9%
M,#8P,39%.# P-3-&,#(V149&,#8S1C S-D4Y,0T*4S$Q,S@P-C1&1C W,3 Q
M1C$X,#-!-C R0T0Y-3!!,3DP,T$V,#)#1#$S#0I3,3$S.# W-#DU,$$Q.# S
M038P,D-$.34P03$Y,#-!-C R0T0Y-3!!1D$-"E,Q,3,X,#@T,3@P,T$V,#)#
M1#DU,$$Q.3 S038R.$-$.31#-$$V,CA$0PT*4S$Q,S@P.31#1#DT.41!-C$T
M0T0Y-#E$038P0T-$.30Y1$$V,#9#1$8Y#0I3,3$S.#!!-#DT.41!-C R0T0Y
M-#E$038P,4-$.30Y1$$V,#!#1#DT-#4-"E,Q,3,X,$(T,C=!-C P0T0Y-# W
M038Q-$-$.34P04$V,#%#1#DT,#<T10T*4S$Q,S@P0S1!-C$T0T0Y-3!!038P
M,D-$.30P-T$V,31#1#DU,$$S1C!$#0I3,3$S.#!$-$%&,T9",#-&0D,S1D(Q
M038P,4(W0C)"-T(S,T9"-#-&-C,-"E,Q,3,X,$4T0C4S1D(V,T9"-S-&0C@S
M1D(Y039&1D(W-D9"-T)&0C<P,0T*4S$Q,S@P1C1#,$(W0D$S1D0Q,T9$,C-&
M1#,S1D,S,T9#-#-&0S$S1D0P#0I3,3$S.#$P-$,R0T0X.3=%,T8R-C-&,C=!
M-C T0C<R,$$V-3A"-S(U04(-"E,Q,3,X,3$T.4%#0S@Q-45!-D9&0C="03-&
M0D)"-D)"04(P-4-$.30X, T*4S$Q,S@Q,C0P-T-$.34R,T$Q,#0R-S$P03$P
M,3(V1C5"-D)"-$-!,4,T#0I3,3$S.#$S-# U,C4P,31&0C="0C(P13)"-D)#
M,C9&0T(V0D(R-S%!,#,-"E,Q,3,X,30T-$$R-S!"-$$R-S!"-$$R-S!"-$$R
M-S!",C!#-D-#.$)&00T*4S$Q,S@Q-30Y-D-#.$-&,T-#.$0X,$-#.$9#,3 Q
M,#$T,D-$.$%".45$#0I3,3$S.#$V-#(V-#0S1D%%0S9&.# P0T0X0CA#0S9&
M.# Q0T0X0CA#-D(-"E,Q,3,X,3<T0S9&.# R0T0X0CA#0S9&.# S0T0X0CA#
M0S9&.# T0T0Q1@T*4S$Q,S@Q.#0X0CA#0S9&.# U0T0X0CA#0S9&.# V0T0X
M0CA#0S9&.$,S#0I3,3$S.#$Y-# W0T0X0CA#0C9!13(W,4)!-C%%0T0Y-# W
M,C P0T$V-#@-"E,Q,3,X,4$T,4%#1#DT,#<R,# U038Q0D-$.30P-T$V,S)#
M1#DU,$%",PT*4S$Q,S@Q0C1#0S@Q,3A#1#@S141#1#@U-D-#1#@W-D)#1#@V
M-4,S1D%!#0I3,3$S.#%#-#@Y,T9#.#-&0S<S1D)!039&1D(W-D8V13 T1#4S
```

```
M1D0V1C$-"E,Q,3,X,40T0C9"0S0Q,#$R.$(V0D,Y-T$Q,#0R-C$T0C9$-4$Q
M,#!!-PT*4S$Q,S@Q130R-C!%,T-$-D(V1#9!,3 U,C8P,C-&1#9"1D0U,C P
M.#$V#0I3,3$S.#%&-$)&1#4S1$,W,C=$03-&0S=#1#@R,#0R,$0S0T,X,3$X
M,D0-"E,Q,3,X,C T0C9$-C(W,4$T03(W,$(T03(W,$(T03(W,$)!
M.0T*4S$Q,S@R,30R,#!#0T,X,CDU0T,X,D-"0T,X,S)"0T,X,SDX038P-#(S
M#0I3,3$S.#(R-$-$.30P-S-&0D4P140Q,$5"-D$S03 V14(W.$)#1#@V1C@-
M"E,Q,3,X,C,T,$-!-C@U0T0X,S@U0C8W,$$P-D5"-SA"0T0X-C!#039!1@T*
M4S$Q,S@R-#0X0T-$.#,X-4(V-D9!,#9%0C<X0D-$.#8P0T$V.3%#1$5$#0I3
M,3$S.#(U-#@S.#4P140S,35#-D8Y,#%#1#@X045!-D,U0T0X,S@U,34-"E,Q
M,3,X,C8T0S9&.3 Q,C<P-4$V,C!#1#DT-S9"-D0R031#,#(V,3 U0@T*4S$Q
M,S@R-S1"-D$V0C<X0D(V03="-SA#0T0X-S(Q039#04-$.#,W-S!##0I3,3$S
M.#(X-$(V-S="-SA"0C8W.$(W.$-#1#@W,C%!-D0R0T0X,S<W-3(-"E,Q,3,X
M,CDT.#%!-C%&0T0Y-# W,T9"13-#0D4S1CDP0C9$,4$T,T9&. T*4S$Q,S@R
M031"-SDQ0T0Y-31"038X1$-$.#,X-4(V1#)!-#-&0C<Y,3$V#0I3,3$S.#)"
M-$-$.34T0D$V0S5#1#@S.#5"-D0S030S1D(W.3%#1#DU0C,-"E,Q,3,X,D,T
M-$)!-D-%0T0X,S@U.#%!-C$U0T0Y-# W,T9"13-#0D4W-PT*4S$Q,S@R1#1"
M-D(R0C<Y,3-&.3!#1#DU-$)!-C@P0T0X,S<W0C9",S$T#0I3,3$S.#)%-$(W
M.3%#1#DU-$)!-C@S0T0X,S<W0C9",4(W.3%#1#DU.3 -"E,Q,3,X,D8T-$)!
M-C@V0T0X,S<W0C9"-$(W.3%#1#DU-$)!-C@Y0T1$1 T*4S$Q,S@S,#0X,S<W
M0C9"-4(W.3%#1#DU-$)!-CA#0T0X,S<W0C9".$$T#0I3,3$S.#,Q-$(W.3%#
M1#DU-$)!-CDP0T0X,S<W0C8X.4(W.3%#1#DU-T$-"E,Q,3,X,S(T-$)!-D,W
M0T0X,S<W.#%!-C$V0T0Y-# W,T9"14(V0S-!0@T*4S$Q,S@S,S1"-SA"0C9#
M-$(W.$-#1#@W,C%!-CA"0T0X,S<W0C9"1C4T#0I3,3$S.#,T-$$Q1D8R-S!#
M03 V14(W.$)#1#@V,$-!-D,V0T0X,S@U-C(-"E,Q,3,X,S4T0C9#,$$Q1D8R
M-S!#03 V14(W.$)#1#@V,$-!-D-#0T1$10T*4S$Q,S@S-C0X,S@U0C9#,4(W
M.$)"-D,R0C<X0T-$.#<R,4$V1#)#1$-&#0I3,3$S.#,W-#@S-S<X,4-$.30Y
M1$(V.$5#1#DT-S9"-CA&0T0Y-#<V-#4-"E,Q,3,X,S@T.#%#1#DT.41"-CA$
M0T0Y-#<V0C8X14-$.30W-D(V.$9%0PT*4S$Q,S@S.31#1#DT-S8X,4$V,C1#
M1#DT,#<S1D)%,T-"14,V1CDX.#!$#0I3,3$S.#-!-#(V-#8P140T,$(U-4-$
M,S4Y,$-$.#E&.$$V.$-!1#(Q,S<-"E,Q,3,X,T(T-35#1C,U.3!#1#@Y1CA!
M-D,U040Q-D(V0T-#,$8Y.$$X0@T*4S$Q,S@S0S1"-SDQ0C9#0D,R1CDX.4(W
M.3!#1#@Y1CA!-D-&040P,44P#0I3,3$S.#-$-#@Q0T0Y-#E$0C8X1$-$.30W
M-D$V,D5#1#DT-S9"-CA%,$0-"E,Q,3,X,T4T0T0Y-#<V0C8X1D-$.30W-C@Q
M0T0Y,3%!0S9&.3 P,C9"- T*4S$Q,S@S1C0T-T$V,3E#1#DT,#<T-3E$-3-#
M1#DQ,T-"-D%&04(P03%%#0I3,3$S.#0P-$(W.3E"-C$V0D4Q.$$T,C R-D8R
M0C9!1D(Q.3DR-D8R0T8-"E,Q,3,X-#$T-#4Y1#4U0T0Y,3-#038P04-$.34P
M030U.40U-T-$.3%$, T*4S$Q,S@T,C0S0S0U.40V,4-$.3$S0S0U.40V14-$
M.3$S0S0U.40W-T4X#0I3,3$S.#0S-$-$.3$S0T$V,3-#1#DT,#<X,4(V0C)!
M,3 R,C8P04(V,#<-"E,Q,3,X-#0T0C%!-# S,C8P-$$V,40R,# W0D5",CA#
M-4%$-CE#,D)#-0T*4S$Q,S@T-30X,3A"0C8R-4(V,C)!0C4P.3="-C(Q03E#
M,T(W,C9"1D4T#0I3,3$S.#0V-#(W,T-!1D$V-3A"-S(U0C8P,4$T-S@T-#0T
M-#0Y-SA#-38-"E,Q,3,X-#<T1#8Y0S%"0C="0S-$0CDR-C<W,T-"-T(V0C=!
M,3!!,C4S,0T*4S$Q,S@T.#0V1C-&0C=!-C5#0C<R-3-#0C9"-D(V03$S0S(U
M-C$S1D$Q#0I3,3$S.#0Y-$(V,T-"-4(V0C5!,3-#,C4U-S-&0C4S0T(X0C9"
M.$$Q-S(-"E,Q,3,X-$$T,3@R-3(P,T9".$(V-D9"-T)&0C8W,$(W0S U-4,S
M,S5%0@T*4S$Q,S@T0C1#,34U0T(S-4,Y-35#1#,U0T9!-D9&0C<V1C-&-S S
M1D8V#0I3,3$S.#1#-$,S,T9#-#-#0C1"-D(T03$Q.#(U,C4S1D(T,T-",T-$
M1#(-"E,Q,3,X-$0T.#0S1$(Q0C,R-#%!038P,4(W0C,S0T(R0C9",D$Q,$,Q
M1 T*4S$Q,S@T130R-3!%038P,4(W0C(S0T(Q0C9",4$Q-C0R-3 R,T9",40Q
M#0I3,3$S.#1&-#-$0D$R-C9%0C9#.$$Q,S$R-#-!03$Q,S(T,T$T.#DW-$$-
M"E,Q,3,X-3 T.$-$-C@U,3(X-T0V.#4Q,S@W.#@X049$,C R03@U-S,Y1 T*
M4S$Q,S@U,30X-3@U.#4X-3@U.#4X-3@U.#4X-3@U.#4X-3@U.#4X-C R#0I3
M,3$S.#4R-#@V-D8X-S<T.#<W1C@W.30X-T-!.#DX1C@U-# Y,#DV1$4-"E,Q
M,3,X-3,T.3!&0C@U-$1!1#$V,C P,C-#0S@X03@P0T0X-44R0T1%,@T*4S$Q
M,S@U-#0X-D4P0T0X-T1!0T0X.44T.#$S0T,W.#$S0S@Y0C8X.31##0I3,3$S
M.#4U-$$Q,T,R-C!",T8X.4-$.#4V0T-$.#8V-$-$.#<V0C-&0T$-"E,Q,3,X
M-38T0S@X,4$V.#!"-S U,C!$,C-&-S4S1C<V,T9#-3@Q,49$.0T*4S$Q,S@U
M-S1$,30U1C@P,$-$.$$Y1D$V-#1#1#A!1C1!-C@V0C<P-40R#0I3,3$S.#4X
M-#@Q.#%!-C@P0C<P-30U1C@P,$-$.$$Y1D$V0D5#1#A!,3$-"E,Q,3,X-3DT
M1C0S1D%%0T0X0C W0C=!,T-$.$(X0T-$.$(P-T-$.$(Y10T*4S$Q,S@U030X
M0T0-$.$(P-T-$.$(X0T-$.$(P-T-$.$(X0T-$.$(P-S4R#0I3,3$S.#5"-$-$
M.$(X0T-$.$(P-T-$.$(X0T-$.$(P-T-$.$(X0T-$-T,-"E,Q,3,X-4,T.$(P
M-T-$.$(X0T-$.$(P-T-$.$(X0T(V044R-S V,T,Q1 T*4S$Q,S@U1#1$,3%%
M1#$R,# X0C9!,T%"-D5"-T$S,T-#-3@Q,$5$,3=%#0I3,3$S.#5%-#(V0C8V
M1D$Q1D8R-C X0C9!,T(W-D9"-S<P,C P14(V13 -"E,Q,3,X-48T03-",39&
M,C,P,D(W-D9",3<P,C0P,D(W-S!"-D$S0D)%,PT*4S$Q,S@V,#0W-D(W-S8R
M-# R,T,W-3@Q0C8X0C)!,#$T,$%%13<T,D4T#0I3,3$S.#8Q-#1$,D$P,35#
M.48S1#A",D$P,30P04(R,$(W.3E"-CDY-#(-"E,Q,3,X-C(T,D$P,30P0C<Y
M,3-&.3!#1#DU-$)"-CDY,D$Q,$(V.$4T-@T*4S$Q,S@V,S1!,3(P,C<P-D$V
M,D1"-SA$,C P-$$V,D1"-SA%.#%"-D)!#0I3,3$S.#8T-#<U0C<Y,$(V-S9"
M-SDQ0C9#-4(W.3)#1#DU,D-"-CDT-38-"E,Q,3,X-C4T03 V14(W.$)#1#@V
M,$,X,3-&-S$S1C<R,45$,C%#1#)!,PT*4S$Q,S@V-C0S1C<W,T8W.#-&-S,S
M1C<T,T9#-C@Q0C9$,D$T0S R-SDW#0I3,3$S.#8W-#!"0C9$,C!#1#(P,D$T
M,T9!-$)&0C=$,C0U1C@Q,$-$.38-"E,Q,3,X-C@T.$$Y1D-$.$(W0T$V035#
M1#A!1C1!-D1&0T0X048T039$.0T*4S$Q,S@V.30P,4-$.$%&-$-$.$(P-T-$
M.$(P-T(W035#1#A",#="-S4V#0I3,3$S.#9!-$$T0T0X0C W0T0X0C W0T0X
M0C W0T0X0C W0T0X0C W-#,-"E,Q,3,X-D(T0T0X0C W0T0X0C W0T0X0C W
M0T0X0C@Q,C<P.4(V1#(P- T*4S$Q,S@V0S0T0T%!0S!"-T0R,C Q-$(V035"
M,#<R0C=!-T(V031",C0X#0I3,3$S.#9$-#<Q0C=!-D(V035"-S<R0C9!-$(W
```

```
M-S$X,4(V1#)!-$,P-3$-"E,Q,3,X-D4T,C8S04(V03="0C<T0C<W-$(V039"
M.3<S0C<W,S-#0S9"-PT*4S$Q,S@V1C1"-D$V0C%#,S(U,3 R,C V0C9!-T(Q
M0S0R,S X0C9!-D5##0I3,3$S.#<P-$(W0S-"-D$W0C=#-$(V039",3<W,C4Q
M,#(R,#9"-D$W1#$-"E,Q,3,X-S$T0C$W.#(S,#A"-D$V0C<W-T(V03="-S<X
M.#$S1CDY0C9$. T*4S$Q,S@W,C0X0C(W,#A!,3 Q,C8Q14$V-T9"-SDY0C8X
M0T%%13DT,C$Q#0I3,3$S.#<S-#4T-#8X-SE&0D(Y.3DW.#8U-#0V,D$P,35#
M0D8Y,3-&-3 -"E,Q,3,X-S0T.3!#1#DU-$(X,4$V,SE"-SA%0C<X1C@Q0C8W
M,T(W.3 P. T*4S$Q,S@W-31"-C<T0C<Y,4(V0S9"-SDR0T0Y-3)#0C8Y,T(W
M.$)"-C!"#0I3,3$S.#<V-#DT0C<X0T-$.#<R,3@Q044P1CA#-D8W.35!,D%&
M0C@Q,#,-"E,Q,3,X-S<T,49$,T$V,T9!1#8Y,C<P,C%%1#,X,3!%1#,Q,4$V
M,#%$, T*4S$Q,S@W.#0S1D$R0T0X.49#0T0X.#$X,C0P,S%%1#,T1D(W03@X
M,49!#0I3,3$S.#<Y-#!%1#,R.3,S03)!-C Q0T0X.49#040W.#(T,#8Q140S
M0CD-"E,Q,3,X-T$T,T9!.#(P,3A"-SDY0D)!.$(W03A!,3 W,C8P14(V.3DV
M-0T*4S$Q,S@W0C0R-S T03$P-S(V,#9"-D$X04(P.$(W03A"-D$X0T)&.#(Q
M#0I3,3$S.#=#-#(X030P1D(W03@X,4$V-T9!1#$U,C<P,C%%1#,P1D0S,#,-
M"E,Q,3,X-T0T,#0S0T0S,45$,S@Q038W.4)"03@Y-SA#-D,P,#@Q0C=#,PT*
M4S$Q,S@W130Y04$V,$9"-SE%-#5&.# X0T0X03E&0T0X0C=#038U-40S#0I3
M,3$S.#=&-$-$.$%&-$$V,#=#1#A!1C1!-C P0T0X048T0C8Y04-$,C -"E,Q
M,3,X.# T.$%&-$-$.$(P-T-$.$(P-T-$.$(X,3(W,#8S03E%,C8R, T*4S$Q
M,S@X,31$-$$V,#$X,3-&.3E"-CDY-#@T.#0X.3<X0T(V-#!$,39"#0I3,3$S
M.#@R-$8X.# R-C,U0C8T,40Q1C@X,3(V,D5"-C0R1#%&.#@R.34-"E,Q,3,X
M.#,T,C8R-T(V-#-$,48X.#,R-C(P0C8T-$0Q1C@X-#(V,3E$,@T*4S$Q,S@X
M-#1"-C0U1#%&.#@U,C8Q,D(V-#9$,48X.#8R-C!"0C8T-S(V#0I3,3$S.#@U
M-$0Q1C@X-S(V,#1"-CDY.3@X,3-#.3E"-CDY03$P.#(S,T4-"E,Q,3,X.#8T
M0C4Y.3@Q,T8Y.4(V.3DT.#0X-#@Y-SA#0C8T,$4Q-3!%. T*4S$Q,S@X-S0R
M-C)%0C8T,44Q-3$R-C(X0C8T,D4Q-3(R-C(R0C8T,T(Y#0I3,3$S.#@X-$4Q
M-3,R-C%#0C8T-$4Q-30R-C$V0C8T-44Q-34R-C$P.3@-"E,Q,3,X.#DT0C8T
M-D4Q-38R-C!!0C8T-T4Q-3<R-C T0C8Y.3DX.#%!-@T*4S$Q,S@X030S0SDY
M0C8Y.4$Q,#@R,T)$.3DX,4%%,S T,D%".#)"-T8U#0I3,3$S.#A"-#DW.49!
M.3E"0C<Y-D(V03A!13 S-#)"0CDW.3="-CDV-C,-"E,Q,3,X.$,T03DP,#@W
M.$$W13A$-T4X13=%.$8X,3-&.3)!-C!&0C<P- T*4S$Q,S@X1#0Y1$$V,#1"
M-SE!,T8Y.4(V.41"0CE!030P1CDW.$-"-D5##0I3,3$S.#A%-#DY14(W.4(W
M.3DS03E!,D%%14(V.3)",3DY,C(P.$(V1#4-"E,Q,3,X.$8T.3E"-SDR0C8Y
M1$(W.$$S03E$,D%$-C-&.3 S1CDQ039$10T*4S$Q,S@Y,#0P-$(W.41"-CE$
M0D(X03DW.$-%-C<Y0D4Y1#0R0D(Y,3 T#0I3,3$S.#DQ-$(W.3$Y1D(Y.3!"
M-SDP,T$Y1#(V13A"-CDQ044R1#0R.$8-"E,Q,3,X.3(T0C<Y,4(V.3!"1CDP
M044R1#0R0D(Y,$(W.3!#1#DU,D,R-0T*4S$Q,S@Y,S1"-CA!030P1D%%,D0T
M,D)".31"-SDQ.49".3DS0C<Y,#4V#0I3,3$S.#DT-#,T.3 S-CDQ0C8Y,#(W
M,39!,3 Q,C(P-D(V.3%!,38X1C<-"E,Q,3,X.34T,C4P0T(V.3%!,#8X0C<Y
M,4(V.3!!,C Q0C<Y,$-$.35"-0T*4S$Q,S@Y-C0T0C@Q.4)#1#@W-S0Y03E$
M.4)#1#@W-T8Y03E$.4)#1#A##0I3,3$S.#DW-#@W.30Y03E$.4)#1#@W0T$Y
M03@Q040P1C4U0T(S-4,Y148-"E,Q,3,X.3@T,T9$-#-&0T0S1D-%,T9#1C-&
M1# X,4,V1CDX.#(W,#9!,0T*4S$Q,S@Y.30S1D-",T9#0T%$-#DT-48Y.#!#
M1#A!.49#1#A"-T-!-CDV#0I3,3$S.#E!-$$U0T0X048T039$1D-$.$%&-$$V
M,#%#1#A!1C1#1#A"0C4-"E,Q,3,X.4(T,#=#1#A",#="-T-#0T0X0C W0C=#
M0D-$.$(P-T-$.$(R10T*4S$Q,S@Y0S0P-T-$.$(P-T-$.$(P-T-$.$(P-T-$
M.$(P-T-$.$(P-T)$#0I3,3$S.#E$-$-$.$(P-T-$.$(X,3(W,#="-D0T-$-!
M03@P0C=$-#@Q,40-"E,Q,3,X.44T,T9#1#-&0T4P140T,$-"-D-#0C!#04(W
M0T5"-D-"0C)#- T*4S$Q,S@Y1C1#.4(W0T0X,4-$.34T0C@Q0C<Y1D$V,3!"
M-SDX0T0X04,Q#0I3,3$S.$$P-$(Y,C9&0D$V1C!#1#A!1C1"-CE&0C<T,$$V
M,#A"-SDY-3D-"E,Q,3,X03$T0T0X0C%#,S9!,$-$.$(Q0S,V03%"-C0P0T0X
M040V0C=$1@T*4S$Q,SA!,C0T,#-!.3DR-D5"038S.$(W.3E#1#A",4,S.3E!
M0T0X0C1$#0I3,3$S.$$S-#%#,SDY04(V.4%!.# Q,#!!,C Q-#8T-C,V-#<S
M-C0V,44-"E,Q,3,X030T,S8T-3,V-#0S-C0S,S8T,C,V-#%"-C0W-#DT.4-$
M.$%$0@T*4S$Q,SA!-31$-C-!.3DR-D0T,T9!14(V-#!#1#A".$-"-C0Q0T0X
M0C4U#0I3,3$S.$$V-#A#0C8T,D-$.$(X0T(V-#-#1#A".$-"-C0T0T0X0CA#
M1$(-"E,Q,3,X03<T0C8T-4-$.$(X0T(V-#9#1#A".$-"-C0W0T0X0CA#0C8Y
M. T*4S$Q,SA!.#1!13(W,3<S1C0P,T8T,3-&-#(S1C0S,T8T-#-&-#4S1D%!
M#0I3,3$S.$$Y-#0V,T8T-S-!.3@R-S S0T,X03 R.#%"1CDY040Q-D$V-D,-
M"E,Q,3,X04$T-35!1#1$038P.$(W.41"13DY1C8U0T)&.3E!1#0Q,T$T- T*
M4S$Q,SA!0C0Y1#(V1C0X0S@Q,3 P-4%%1D$U038R-C(V,C8R,C9&.3)##0I3
M,3$S.$%#-#$Q,#5!-D9&045$,T(T,#$V,C8R-C(V,C5!,C9&-T$T,$$-"E,Q
M,3,X040T,#$X,3$P,#5!-3 Q,C<P,C$Q,#5!13%%-4$R-D9$,#!#.0T*4S$Q
M,SA!130P,3 P-#9!135!-4$R-D9$,3$P-4%%,30U03(V1D0X,41##0I3,3$S
M.$%&-$%$,D-!1$1%041$0T%$1$%!1$0X041$-D%$1#1!1$0R1C(-"E,Q,3,X
M0C T041$,#@Q039&1D%$0T)!1$,Y041#-T%$0S5!1$,S041#.0T*4S$Q,SA"
M,31#,4%$0D9!1$)$040P-S@Q039&1D%$0C8T.3@Q0C=!1#1"#0I3,3$S.$(R
M-$(X04%"-T%"0C9!.4(W04$S1D$Y038P.$(W04-"-D%"-48-"E,Q,3,X0C,T
M-48T-C(T,#$U0S-!04,R-D8X0D9!0S Q04,P0T$V,#$S. T*4S$Q,SA"-#1"
M.$%!0C=!04$V0S!".$$Y0C=!.4(V04(U1C0X-3DT.#A!#0I3,3$S.$(U-#4Y
M-#@U.30X-3DT.#4Y-#@U.4(W04-".$%!0C=!03E&-D(-"E,Q,3,X0C8T0CA!
M.4(W03E"-D%#-#@U.4(W04-".$%!0C=!03E&0CA"0PT*4S$Q,SA"-S1!.4(W
M03E"-D%#0C9!1#@Q,T9!03-&03DX,4$V,#%".$5$#0I3,3$S.$(X-$%!,C8P
M-$$V0C!".$$Y.#%".$%%.3<X0T0V.4,U,T(W0T,-"E,Q,3,X0CDT044X,4$V
M,#%"-T)%038Q,D-$.30P-S-&0D0S0T(Y039#0@T*4S$Q,SA"030P14-$.30Y
M1#-&.41"-CE$03$P-3(V,49!-C$T0T0Y-#=##0I3,3$S.$)"-# W038X1D(W
M-3!"-D(X0C<Y,3-&.3!#1#DU-$)"-CA%1C0-"E,Q,3,X0D,T0C<U,4(V.$9"
M-S4R,T8U,T-#.$,S.$$V.#9"-S4P038T0PT*4S$Q,SA"1#0R1D(W-3-"-S4V
M038R,$(W-3E!-C-!0C<U0S-&-49"-C)!#0I3,3$S.$)%-$(R0C<Y,3-&.3!#
```

```
M1#DU-$)"-CA%0C<U,4(V.$9"-S4R-D0-"E,Q,3,X0D8T0C9",T(W.3$S1CDP
M0T0Y-31"0C8X14(W-31"-CA&0C=&-0T*4S$Q,SA#,#0U-4(V0C%"-SDQ,T8Y
M,$-$.34T0D(V.$5"-S4W0C8X1C0U#0I3,3$S.$,Q-$(W-3A"-D(T0C<Y,3-&
M.3!#1#DU-$)"-CA%0C<U04(V,#0-"E,Q,3,X0S(T.$9"-S5"0C9"-4(W.3$S
M1CDP0T0Y-31"0C8X14(W-40Q- T*4S$Q,SA#,S1"-CA&0C<U14-$.30V,D)%
M.40X0T0V.4,T1$-$.30Y1#9"#0I3,3$S.$,T-$(V0D-!,49&,C=&04$Q,#0R
M-S$P03$P,#(W,#A!,3 R.4$-"E,Q,3,X0S4T,C<P0D$Q,#,R-S W,T9"1#(P
M139#0SA#1$)!-C Q0C<W-0T*4S$Q,SA#-C0Y.4(V0D0R-S!!03$P0C(U-C4S
M04)$038P-4(W.3E"-D4Q#0I3,3$S.$,W-$)#03$P,S(W,D)"13E$.$-$13E#
M,S<V0T(Q139",4$S-$(-"E,Q,3,X0S@T,#(R-C$Q0T0X-#-$0C<Y.4)%.40X
M0T1%.4,S-T4V0C$Y-@T*4S$Q,SA#.31",3DY,C P,T0Q.4,S1#(S,D-$-CE#
M-#5%-T(Q,C R-40R#0I3,3$S.$-!-$)%.41$13E#,S<X0S9!0C%%-D(Q,D(P
M-40Q.4,T-3(T-D,-"E,Q,3,X0T(T,31$-CE#,T1%-T(Q03,P,C(V,$)#1#@T
M,T1"13E$1$5"- T*4S$Q,SA#0S0Y0S,W.$-%-T(Q,T-"1$$V1D9"-T)#0T,X
M0D%!,T-"1#E!#0I3,3$S.$-$-$$V1D9"-T)#0T,X0S0T0C9"0T$Q,# R-D9!
M,T,Y1$(V,38-"E,Q,3,X0T4T.41!,3 V,C9%-C-&0CE!-C!#0T0Y-#E$0T,X
M,3$X038W.0T*4S$Q,SA#1C0P04-$.30P-T$V,CA#1#DU,$%#-D8Y,#!!-# S
M0C<T,#8S#0I3,3$S.$0P-$,V1CDP,4$T,#%"-S0Q0S9&.3 R030P,4(W-#)"
M-C0P03D-"E,Q,3,X1#$T04(P0D-$.30P-T-$.34R,T$Q,#0R-S%&03$P,C(V
M,$9%-0T*4S$Q,SA$,C1!,3 S,C8P,C(P149"-C0P-$$R03!#038P,C(P,#A"
M-C8T#0I3,3$S.$0S-#0P-$-!,3 S,C8P,31&0C<T,#(P1#-"-C0Q04(Q0T-$
M,3 -"E,Q,3,X1#0T.30P-T-$.34R,T$Q,#0R-S$X03$P,C(V,$)!,3 S,C8W
M.0T*4S$Q,SA$-30P,C(P149"-C0Q-$$R,# S0C8T,31#030P,4(W-#$R,#DV
M#0I3,3$S.$0V-$1!.4(T-48Y,#!#1$8P,#,S1C0S,T8T-#-&-#4S1C0V-T$-
M"E,Q,3,X1#<T,T8T-S0U1CDP,$-$1C P-CE!0T,X,3$X,#$P,3(T0T0W,@T*
M4S$Q,SA$.#0X04(Y,C8R,D$V,$5#1#DT,#=!-C(X0T0Y-3!!038P1C0U#0I3
M,3$S.$0Y-$-$.30P-T-$.34R,T$Q,#$R-S V03$P-#(W,$(R,$8S,C4-"E,Q
M,3,X1$$T0T,X1CE%0T,X,4$S0T,X,4%!.4(T-48X,#!#1$8P,#,T,PT*4S$Q
M,SA$0C0T-48X.#!#1$8P,#,S1D$R038Q,$-$.#E&0S0U1C@P,# X#0I3,3$S
M.$1#-$-$1C P-D$V,3)#1#@Y1D,T-48X,#A#1$8P,#8Y04$V.#8-"E,Q,3,X
M1$0T,41#1#@Y1D,U-30P,S4U,#4U-#(S-34R-34T-#,U-31#,@T*4S$Q,SA$
M130U-30V,S4U-C-#03)!-C%$0T0X.49#-34T,#<U-3 R-D4R#0I3,3$S.$1&
M-#%#-34T,C<U-3(R-C$V-34T,C<U-3(R-C$P-34T,C<U,34-"E,Q,3,X13 T
M-3(R-C!!.4$T-48X,3!#1$8P,#8Y03(P,3)!-C(P0T1#1@T*4S$Q,SA%,30Y
M-# W0T0Y-3(S03$P,3(W.#=!,3 T,C=",C(P1C,T-3 T#0I3,3$S.$4R-# P
M,T8V1C4P-4$R049"038Q,$-$.30P-S-&.41!-C-&1$4-"E,Q,3,X13,T0T0X
M-T4S,T9!,D$V,#%#1#@Y1D-#1#@X-C<R-3 X-$-%- T*4S$Q,SA%-#1",3E$
M,C=%1D-#.$1!1$(V.40T.#0X-#@Y-SA#0C8T,#9##0I3,3$S.$4U-$4W-3!"
M-C0Q13<U,4(V-#)%-S4R0C8T,T4W-3-"-C0T-#8-"E,Q,3,X138T13<U-$(V
M-#5%-S4U0C8T-D4W-39"-C0W13<U-S-#.40S0@T*4S$Q,SA%-S1"-CE$04)#
M04-$.30Y1$(V.41!0C,P0T0Y-#<V0C8Y1$-##0I3,3$S.$4X-$$Q,#@R-S V
M0T,X13,W0T,X1$%$039#-T-$.30Y1$$V-4,-"E,Q,3,X13DT,S)#1#DT-S9!
M-C W0C<Y1#-&03)!-C Q0T0X.49#0T0Q.0T*4S$Q,SA%030X.#8W,C5%,T(Q
M.40R-T8P0C<Y.4(V.40T0T$T,#="-S!$#0I3,3$S.$5"-#E$0C8Y.4(Q.40R
M-D0P04)#0D-$.30Y1$$V,D1#1#DT1#(-"E,Q,3,X14,T-S9"-CE$03$P-S(V
M1#%!-C W0C<Y1$$V0S=#1#DT.41#-@T*4S$Q,SA%1#1!-C,S0T0Y-#<V,T9!
M,D$V,#%#1#@Y1D-#1#@X-C<R-3%&#0I3,3$S.$5%-$$V0C$Y1#(W1C!"-SDY
M0C8Y1#1#030P-T(W.41"-CDY,S(-"E,Q,3,X148T0C$Y1#(V.3-!0D-"0T0Y
M-#E$0C8Y1$%",S%#1#DT-S9%.0T*4S$Q,SA&,#1"-CE$03$P-S(V0T9!-C=&
M0T0X-T4S.4(T-3 P-3!#1#$P#0I3,3$S.$8Q-#A&03$T-48X.#!#1$8P,#8T
M-3 P-3A#1#A&03$T-48X0S(-"E,Q,3,X1C(T.#A#1$8P,#8T-3 P-C!#1#A&
M03$T-48X.3!#1$8P,#9"0PT*4S$Q,SA&,S0T-3 P-CA#1#A&03$T-48X.3A#
M1$8P,#8T-3 P-S!#1#8U#0I3,3$S.$8T-#A&03$T-48X03!#1$8P,#8T-3 P
M-SA#1#A&03$T-48X-3(-"E,Q,3,X1C4T03A#1$8P,#8T-3 P.#!#1#A&03$T
M-48X0C!#1$8P,#8R0PT*4S$Q,SA&-C0T-3 P.#A#1#A&03$T-48X0CA#1$8P
M,#8Y04$V,3%#1#4Y#0I3,3$S.$8W-#DT,#=#1#DU,C-!,3 T,C9&.4-$.#DV
M-D(V03A#,$8X,S,-"E,Q,3,X1C@T,C@T,$(W-# S1C0Q,T8T,C-&-#,S1C0T
M,T8T-3-&-#8V0@T*4S$Q,SA&.30S1C0W.4(T-48X,CA#1$8P,#8Y04-#.#$Q
M.$8V0C<T,#DT#0I3,3$S.$9!-$4V,#%"-S0Q138P,D(W-#)%-C S0C<T,T4V
M,#1"-S0T,S$-"E,Q,3,X1D(T138P-4(W-#5%-C V0C<T-D4V,#="-S0W.#$P
M,3 Q-#@R,PT*4S$Q,SA&0S1#1#A!0CDR-C0V,T9!14,V1C@Q,$-$.$(X0T,V
M1C@Q,4%&#0I3,3$S.$9$-$-$.$(X0T,V1C@Q,D-$.$(X0T,V1C@Q,T-$.$(X
M0T,V-S8-"E,Q,3,X1D4T1C@Q-$-$.$(X0T,V1C@Q-4-$.$(X0T,V1C@Q-D-$
M.$)!-@T*4S$Q,SA&1C0X0T,V1C@Q-T-$.$(X0T(V044R-S$S038R,4-$.30P
M-S4W#0I3,3$S.3 P-$$V,CA#1#DU,$%#0SDP.3-#0S@Q03-#0S@Q04%!-C!&
M.3,-"E,Q,3,Y,#$T0T0Y-# W0T0Y-3(S03$P,3(W14)!,3 T,C<P,C(P1C-#
M-@T*4S$Q,SDP,C0Y0C0U1CDX,$-$1C P,SE!,T9!,D$V,41#1#@Y1D,X0S S
M#0I3,3$S.3 S-$%%,#@U044V-#!$,48X,3 R-C(U-4$R-D8U,T-!,D$V1#4-
M"E,Q,3,Y,#0T,41#1#@Y1D,X0T%%,#@U044V-#!$,48X,3 R-C$P-4$W10T*
M4S$Q,SDP-30R-D8U038R,D-$.30P-T$V,CA#1#DU,$%#0SDP.3,Y0D8Y#0I3
M,3$S.3 V-#0U1CDX,$-$1C P-C-&-#!#1#@Y.4$U-4-",S4T,4$V0T,-"E,Q
M,3,Y,#<T1D9"-S0S0C<T-$(W-#5"-S0V0C<T-S0U1CDX.$-$1C W00T*4S$Q
M,SDP.#0P-CE!0T0X.3=%038R,T-$.30P-T$V,CA#1#DU,$%#0S)$#0I3,3$S
M.3 Y-#@Q,3A#-D8Y,#!!,3 R,C8P,T-#.3(W131$,C8P-D(V.3D-"E,Q,3,Y
M,$$T.#E!,3-",C8U,4$V,#%"-T)%038U1D(W-3!"-D(R0C<Y-0T*4S$Q,SDP
M0C0Y,3-&.3!#1#DU-$)"-CA%0C<U,4(V.$9"-S4R0C9",SDX#0I3,3$S.3!#
M-$(W.3$S1CDP0T0Y-31"0C8X14(W-3-"-CA&0C<U-$(V.# -"E,Q,3,Y,$0T
M0C1"-SDQ,T8Y,$-$.34T0D(V.$5"-S4U0C8X1D(W-38V10T*4S$Q,SDP131"
M-D(U0C<Y,3-&.3!#1#DU-$)"-CA%0C<U-T(V.$9"-T9"#0I3,3$S.3!&-#4X
```

```
M,T8U.4-$.3(V-3@Q0S9&.3 P03$P,C(V,#-#0SDS-#D-"E,Q,3,Y,3 T,C(T
M1#(V,$)"-C@Y03$S0C(V,$)#1#DQ-$4R,# S0T1#1@T*4S$Q,SDQ,30Y,40P
M0T0Y,C8U.#%!-C0P0C<Q,T$V,$-"-S$T038P,$-%#0I3,3$S.3$R-$(W,35#
M-D8Y,# R-S!#03$P,3(W,#1!-C,T,C P-D$V,#8-"E,Q,3,Y,3,T,S(R,# R
M038S,T(W,3DX,48V,C<P.4(W,3@P1#$V1D0Y- T*4S$Q,SDQ-#1!1C Q,C!&
M-$$V,#5#1#DU,$$X,4$V,#%"-T)%038V,SDV#0I3,3$S.3$U-$(W-3!#1#@X
M0T9"-CA$0C<U,4(V.$5"-S4R0C8X1D(W-#@-"E,Q,3,Y,38T-3-!-C<S0C<U
M-$-$.#<U,$$V,S!"-S4U0C8X14(W-39!.0T*4S$Q,SDQ-S1"-CA&0C<U-T$V
M-C="-S4X0C8W-T(W.$)"-C<X0C<X0SDX#0I3,3$S.3$X-$-$.#<R,4$V,S!"
M-S4Y0C8X14(W-4%"-CA&0C<U0D$V,D$-"E,Q,3,Y,3DT-S1"-S5#0T0X-C0S
M0C8X1$(W-41"-CA%0C<U14(V.$9"-0T*4S$Q,SDQ031"-S5&038W,$(W-C U
M-4-$,S4Y,$-$.#E&.$(V.$1"-S0U#0I3,3$S.3%"-#8Q0C8X14(W-C)"-CA&
M0C<V,T$V-C5"-S8T038S,4(W1#8-"E,Q,3,Y,4,T-C5!-C<W0C<V-D$V,$1"
M-S8W,T8V.#@Q038P,4(W0D5%,PT*4S$Q,SDQ1#1!-C8S0C<U,$-$.3(U0S!%
M1#,P-4$V,#)#1#@X045"-C<U#0I3,3$S.3%%-#A$0C<U,4(V.$5"-S4R0C8X
M1D(W-3-!-C<S0C<U-$-$-34-"E,Q,3,Y,48T.3(U0T(V1#)!-$,P,C8P0D(V
M039"-SA"0C9!-T(W.$,Q10T*4S$Q,SDR,#1#1#@W,C%"-CA$0C<U-4(V.$5"
M-S4V0C8X1D(W-3=!-C0X#0I3,3$S.3(Q-#<T0C<U.$-$.3(U0S!%1#$P.4(V
M03-!,#9%0C<X0D-$04$-"E,Q,3,Y,C(T.#8P0T(V.$1"-S4Y0C8X14(W-4%"
M-CA&0C<U0D$V-S X1@T*4S$Q,SDR,S1"-S5#-35#1#,U.3!#1#@Y1CA"-CA$
M0C<U1$(V.$5"-SA##0I3,3$S.3(T-#5%0C8X1D(W-49!-C8U0C<V,$$V,S%"
M-S8Q038W-T(W-S@-"E,Q,3,Y,C4T-C)!-C!$0C<V,S-&-C0X,4$V,D1"-SA$
M0C<X14(W.$8Q,0T*4S$Q,SDR-C0X,39%-3!$-S%#,30X,3A".$-"13$V0D5$
M-T8V,C8P-#A&#0I3,3$S.3(W-#%$,30R,# T-T4Q.$)&1#<X03@P038R,4(W
M-3!"-S4Q.#4-"E,Q,3,Y,C@T038R1#A#044Q,T4W-3(U03)!1D)"-D0R031#
M,#(V,CE#,PT*4S$Q,SDR.31"-D$V0C<Y,$(V03="-SDQ039$0D(W.3)#1#DS
M03$S.#="#0I3,3$S.3)!-#DT,SDY,S,Y.34S.#DT,SDY,S,Y.35"-CDS0C<Y
M-$(V1#@-"E,Q,3,Y,D(T.35"-SDS-#4P,#4R0T0Y,T(Y,$5$,S$S038S,$(W
M-38T, T*4S$Q,SDR0S1"-S4W0C<U.4(V03A!-#!&.3<X0T0V.3-&-T(W-3@P
M14,W#0I3,3$S.3)$-$0Q,D1"-D$S03 V13)!,#$T,$%%,#DT,D)&.3-"-SDT
M,C -"E,Q,3,Y,D4T0C9!,T$P-D4R03 W,S Y-#1&0C(Y,T(W.3-"-CDT04(T
M-PT*4S$Q,SDR1C0T,$(W.31"-CDS03DP,4(W.3,T-3 P-4%#1#DS0CE#-C(P
M#0I3,3$S.3,P-$8Y.#@R-C$T0C9#0T,P1CDX04(W.31"-D-"0S)&.3@Y0S4-
M"E,Q,3,Y,S$T0C<Y,S0U,# U14-$.3-".3-&-C)#1#DR-C4X,4$V,D0X-@T*
M4S$Q,SDS,C0X0T%%,4)%-S4P-4$R049",T8Y,S-&.30V13 Q.35"-D-"#0I3
M,3$S.3,S-#DU0C%",C(W,3$Y-SA#1#8Y0S)"0D(Y-$(W.30S0SDU0T$-"E,Q
M,3,Y,S0T,C1%1#-#.3,R,$4Y0C9",4$T,#,R-C!#0C9",D$Q,#-%, T*4S$Q
M,SDS-30R-3 V,T,Y-#(T,#(S0SDS0C9",T)".31"-SDT,C0P,D5##0I3,3$S
M.3,V-#-#.3,T-3 P-C!#1#DS0CE"-D(T044S0S0R0D8Y,T)"0S4-"E,Q,3,Y
M,S<T0C5"-SDT,C0P,C-#.3,T-3 P-C1#1#DS0CE#-D8Y.#A%-PT*4S$Q,SDS
M.#0R-C!$,$5$-#!!-35#1#,U.3,T-3 P-CA#1#DS0CE!-C8P#0I3,3$S.3,Y
M-#!$0C<V0T$V,$%"-S9$,T8V14-$.3(V-3@Q0C8Y,D)%0SD-"E,Q,3,Y,T$T
M.3$T,D(W.31"1CDS0C8Y,D)%.3 T,D)".3-"-SDS.48S-@T*4S$Q,SDS0C1!
M.3 P0C<Y-3@Q.#DX0D(V.3,V,D$T,$8X0SDW1#8Y,S,Q#0I3,3$S.3-#-$8W
M.$$X.$8W.#DX0D(V.3-!-#!&.$,Y-T0V.3-&-SA!-S@-"E,Q,3,Y,T0T.#A%
M-S Q.#DX0D(V.30V,D$T,$8X0SDW1#8Y,T8W.$$Y-0T*4S$Q,SDS130X.$4W
M,#(X.3A"0C8Y-$$T,$8X0SDW1#8Y,T8W.$$X.#5%#0I3,3$S.3-&-$4W,#,X
M,3,P,S$S,C,S,S0S-3,V,S<S.#,Y-#$T,C0S,C<-"E,Q,3,Y-# T-#0T-30V
M044R.#0R04(Y,D(W.3<Y1D$Y.35"-SDV038Q,@T*4S$Q,SDT,30P,4-$.30Y
M1$$V.#!#1#DT.41!1#,Q039#,$-$.30Y1$1&#0I3,3$S.30R-$%$,D$X,4%%
M,#DT,D%",3)"-SDW.49!.3E#0C<Y-C4U-3(-"E,Q,3,Y-#,T.39&-D%&,#$S
M-3DV0T0Y-#E$038P.$(W.40U-3DV1C8S0PT*4S$Q,SDT-#1!1C Q,S4Y-D-$
M.30W-C-!.40R-D8R.#%!-C$T0C<Y.#0Y#0I3,3$S.30U-#4U.39&-D%&,#$S
M-3DV040Q.3-!.3@R-D8S.#%"-C4P-S -"E,Q,3,Y-#8T040S-S0U,# U,48V
M,C<P.4)&.4%!1# V0D4Y035#,C W- T*4S$Q,SDT-S1&-#@Q040V-3DW0C8P
M-$%!1D5"-S T.49!-$8P04$P,D-!#0I3,3$S.30X-$(W,# Y1#$V,# V,C8R
M,3<P,#E&-C)!-$8P04$P,D(W.3<-"E,Q,3,Y-#DT,# Y1#$V,# V,C8R,3<P
M,#@Q040S13DW0C8P-$%!1D5$,0T*4S$Q,SDT031"-S T.49!-$8P04$P,$(W
M,# Y1#$V,# V,C8R,3<P,$0W#0I3,3$S.31"-#E&-C)!-$8P04$P,$(W,# Y
M1#$V,# V,C8R,3<P,#@Q.48-"E,Q,3,Y-$,T.3="-C T04%&14(W,#1!-$8P
M04$P,$(W,# Q-C P-C(W,PT*4S$Q,SDT1#0V,C$W,#!!-C U0T0Y-3$U.#%"
M-SDY,T8Y0D(V,#1!-$4P#0I3,3$S.31%-#!&04$P14(W,#1!-C T0C<P,#$V
M,# V,C8R0C8P,#$W14$-"E,Q,3,Y-$8T,# Q-C P-C(V,C$W,#!!-#@P,C9%
M,$(V.4(R-C T,T,Y,@T*4S$Q,SDU,#0Y0C(P1$%"-CDY.#%"-SE#038V-$%$
M,#4S03E#,C9&.$5"#0I3,3$S.34Q-#@Q-48X0T%&,#$V-3 S13@R-D8Y-$$R
M-D8T.$,X,4(V.3$-"E,Q,3,Y-3(T0D,R-D9#0C9"0S(W1D,X,4$V,3!"-SDY
M-$8S.#DQ,SE%. T*4S$Q,SDU,S0Y,#0Y0C$Y,C(U,#)",#DR,SDY-#,Y.3,S
M03DY,C9%1#%&#0I3,3$S.34T-#,S.3,S,SDT0C<Y-3@Q038S,$(W.$1"-SA%
M0C<X1D(V-44-"E,Q,3,Y-34T.3 R-C V0C8Y,4$Q-C0R-3!%0C8Y,4$P-C1"
M-SDQ,C0Q,0T*4S$Q,SDU-C0P,C-!.3 S0SA$,C!%.$$Q,$$R-3 V03 P03-#
M.$4R,$5##0I3,3$S.34W-$8V04(S,$(W.$8S1$)%,C8Q-$(V.$1!,3,P,C8P
M14$V03D-"E,Q,3,Y-3@T,C!"-SA$0C8X14$Q,S R-C T038R,$(W.$4X,3(P
M,C V- T*4S$Q,SDU.30U-S8Y-D,V0S(P-C$V138T,C U,C<U-S,W,S(W-S,R
M,#4Q#0I3,3$S.35!-#(P,C R,#(P-#$U,#4R-3,R,#4W-S@R,#4S-S0V,3<T
M-3(-"E,Q,3,Y-4(T-CDV1C9%,C R,#(P,C R.#8S,CDR,#0S-D8W,#<Y-S)&
M0PT*4S$Q,SDU0S0V.38W-C@W-#(P,S(S,#,P,S R,#(P,C T,S1$-#DR,$%#
M#0I3,3$S.35$-#4P-S(V1C8T-S4V,S<T-CDV1C9%-S,R13(P,C R,#(P,T(-
M"E,Q,3,Y-44T,C R,#0Y-D4R,#9$-C4V1#9&-S(W.3(P-D8V-C-!,C W- T*
M4S$Q,SDU1C0R,#(P-#0W,C)%,C T1#9&-S(V-S8Q-D4R,#,Q,SDS,D9&#0I3
```

```
M,3$S.38P-#,S,D0S,3,Y,SDS.30U-S(W,C9&-S(R,#<R-C4V,38T-3 -"E,Q
M,3,Y-C$T-CDV138W,C S,3)$-S<V.3<R-C4V-#8Q-S0V,3(Q,C!&- T*4S$Q
M,SDV,C0R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P-30V-4(Y#0I3,3$S
M.38S-#9$-S R,#)$,D0R1# P-#8R,#1#,D0R1#)$,C T.#)$1# -"E,Q,3,Y
M-C0T,D0R1#4W-CDV138T,C R1#)$,D0P,#(P,D0R1#1$-3 V. T*4S$Q,SDV
M-30T.#(P-#<R,#)$,D0T-#8Y-S,W,#9#-C$W.3(P-#,W-3)"#0I3,3$S.38V
M-#<R-S(V-39%-S0R,#0T-C$W-#8Q,C R,#(P,C R,#(P-D0-"E,Q,3,Y-C<T
M,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#4S-C4V00T*4S$Q,SDV.#0W
M-#(P-4$W-39#-S4R,#0T-C$W-#8U,D8U-#8Y-D0V-3,R#0I3,3$S.38Y-#(P
M,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P0S(-"E,Q,3,Y-D$T,C R
M,#(P,C R,#(P-34T,34R-30R1C0T-CDW,S<P-D,X0@T*4S$Q,SDV0C0V,3<Y
M,C V1C<P-S0V.39&-D4W,S(P,C R,#(P,C R,$1##0I3,3$S.39#-#(P,C R
M,#(P,C R,#(P,C R,#(P,C R,#(P,C U-S8Y,3(-"E,Q,3,Y-D0T-D4V-#(P
M-C$V138T,C U-#8U-D0W,#8U-S(V,3<T-S4X-@T*4S$Q,SDV130W,C8U-3,V
M-39%-S,V1C<R,C U,S8U-S0W-3<P,C R,$(P#0I3,3$S.39&-#(P,C R,#(P
M,C R,#4R-C$V.39%,C T-S<U-C$V-S8U,$8-"E,Q,3,Y-S T,C U,S8U-S0W
M-3<P,C R,#(P,C R,#(P,C R,#(P,C!%, T*4S$Q,SDW,30R,#(P,C R,#(P
M,C R,#(P,C R,#(P,C R,#(P-#8V1D-##0I3,3$S.3<R-#<R,C W,S8U-D,V
M-38S-S0V.39&-D4W,S-!,C R,#(P0T,-"E,Q,3,Y-S,T,C R,#4U,D8T-#-$
M-C,V.#8Q-D4V-S8U,D,R,#<S-C4U,@T*4S$Q,SDW-#0V0S-$-D4V-3<X-S0U
M,S8U-D,V-38S-S0R,#0Y-D4W-$9%#0I3,3$S.3<U-#8U-S(V-C8Q-C,V-3-!
M,C R,#(P,S4R1#9$-CDV13(P,T(-"E,Q,3,Y-S8T-C$W-C8U-S(V,38W-C4V
M-#(P,C@U-#1%-#,R.34S-C5!- T*4S$Q,SDW-S0V0S8U-C,W-#(P-#DV13<T
M-C4W,C8V-C$V,S8U,T$R,#)%#0I3,3$S.3<X-#(P,C S-3)$-S,V-38S,C V
M0S8Y-S8V-3(P,C@T,S9&,D$-"E,Q,3,Y-SDT-D0W,#<U-S0V-3<R-3,V-39#
M-C4V,S<T,C T.39%-S0W.0T*4S$Q,SDW030V-3<R-C8V,38S-C4S03(P,C R
M,#,U,D0W,S8U-C,R,$8T#0I3,3$S.3="-#9#-CDW-C8U,C R.#4P-C4V-3<T
M,CDR,#(P,C U-S0Q1D$-"E,Q,3,Y-T,T-3(T130Y-$4T-S(Q,C T1#<U-S,W
M-#(P-C@V,3<V-C4V-0T*4S$Q,SDW1#0R,#(P-S,V-39%-S,V1C<R,C V,38S
M-C,V-3<S-S,R,$8U#0I3,3$S.3=%-#(X-S<V,38Y-S0R.31&-$(R,#<T-D8R
M,#0S-D8V13<T,4$-"E,Q,3,Y-T8T-CDV13<U-C4S1C(P,C R,#(P,C U,S8U
M-D,V-38S-S0W,0T*4S$Q,SDX,#0S1#8W-D8R0S(P-$0V-39%-S4S1#8U-S@V
M.3<T-3(V1D$T#0I3,3$S.3@Q-#<T-C$W-#8U,C T,S9#-D8V,S9"-S<V.3<S
M-C4R,#(P.$4-"E,Q,3,Y.#(T,C R,#<S-D,V1C<W-D,W.3(P,S$R1C,S,C R
M1#)$,D1%0PT*4S$Q,SDX,S0R1#)$,D0R1#)$,C U,#9&-CDV13<T,C W-#9&
M,C U-#E%#0I3,3$S.3@T-#<R-S4V-3(P-$4V1C<R-S0V.#(P-S0V.#8U-D4R
M,#<P,T$-"E,Q,3,Y.#4T-S(V-3<S-S,R,#4S-C4V0S8U-C,W-#(P,C R,#4S
M-C5!0@T*4S$Q,SDX-C0W-#-!,C R,#<X-S@R1C<X-S@R1C<X-S@R,#<X-S@S
M03A!#0I3,3$S.3@W-#<X-S@R.#<S-C4V0S8U-C,W-#-$-D4V-3<X-S0R.3(P
M,#,-"E,Q,3,Y.#@T,C R,#(P,C R,#(P-$8V138U,C V1#9&-D0V-39%-S0S
M10T*4S$Q,SDX.30R,#<P-D,V-38Q-S,V-3)%,D4R13(X-38V-3<R-S,V.39"
M#0I3,3$S.3A!-#9&-D4R,#,Q,D4S,#,X,D4S,#0S,CDR,#(P,C U,S8U,$$-
M"E,Q,3,Y.$(T-S0R,#1#-D8V,S8Q-D,R,#8X-D8W-3<R,C W.#<X,C Q,PT*
M4S$Q,SDX0S0R,#(P,C@U,S8U-D,V-38S-S0S1#8T-D8V138U,CDR,#E##0I3
M,3$S.3A$-#(P,C R,#(P,C R,#9$-D0R1C8T-C0R1C<Y-SDR,#8X-#8-"E,Q
M,3,Y.$4T-C@S039$-D0U03(P-C@V.#1#,C U,S8Q-D0W,#9#-C5$0PT*4S$Q
M,SDX1C0R,#<X-S@R1C,V,S R,#(P,C R,#(P,C R,#(P-30V1D8X#0I3,3$S
M.3DP-#8T-C$W.3(P-#<W-3<S-S0R,#<X-S@T1#4P-#@R,#(P,3D-"E,Q,3,Y
M.3$T,C R,#4Y-C4W,S<T,C T.#)$,D0R1# P,C T0S)$,D1!-0T*4S$Q,SDY
M,C0R1# P,C T-S<X-S@U,S8U-D,V-38S-S0R,#4U-D4V.49&#0I3,3$S.3DS
M-#<T-S,S03(P,C R,#(P,C R,#(P-#4V138W-D,V.3<S0D,-"E,Q,3,Y.30T
M-C@R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#4S-C4T1@T*4S$Q,SDY-30V
M0S8U-C,W-#(P-34V138Y-S0W,S-!,C R,#(P,C R,#1!#0I3,3$S.3DV-#(P
M,C T1#8U-S0W,C8Y-C,R,#(P,C R,#(P,C R,#(P-$(-"E,Q,3,Y.3<T,C R
M,#(P,C R,#(P-3,V-3<T-S0V.39%-C<R,#<U-S S0PT*4S$Q,SDY.#0R,#4T
M-$4T,S)%,D4R13(P,C R,#(P,C R,#(P,C R,#(P#0I3,3$S.3DY-#(P,C R
M,#(P,C R,#(P,C R,#(P,C R,#(P,C S,3)$03$-"E,Q,3,Y.4$T-3<V.3<R
M-C4R,#0R-S4W,S(P-#4W,C<R-D8W,C(Q,C V,PT*4S$Q,SDY0C0R,#(P-#(W
M-3<S,C W,S8X-D8W,C<T-C4V-#(P-S0V1C$Y#0I3,3$S.3E#-#(P-#<T130T
M,C R,#,Q,D0U-S8Y-S(V-3(P-#(W-3<S,3<-"E,Q,3,Y.40T,C T-3<R-S(V
M1C<R,C$R,#(P,C T139&,C T-#8U-S9$. T*4S$Q,SDY130V.38S-C4W,S(P
M-S(V-3<S-S V1C9%-C0R13(P-3<V.4$R#0I3,3$S.3E&-#9%-C0R,#0T-CDW
M,C8U-C,W-#8Y-D8V13(P-S0V-3<X-4(-"E,Q,3,Y03 T-S0S031%-S4V1#8U
M-S(V.38S,C V-#8U-C<W,C8U-C4T,0T*4S$Q,SE!,30W,S(P,C R,#(P,C U
M-S8Y-D4V-#(P-#0V.3<R-C4V,SDR#0I3,3$S.4$R-#<T-CDV1C9%,C W-#8U
M-S@W-#-!-#,V1C9$-S V,3<S1C(-"E,Q,3,Y03,T-S,R,#(X-#4R0S(P-$4R
M0S(P-C4W-#8S,D4R.31%-D9%. T*4S$Q,SE!-#0R,#0Y-#0W,S(P-S W,C9&
M-C<W,C8Q-D0V1#8U-C0R13<R#0I3,3$S.4$U-#(P,C U,#9#-C4V,3<S-C4R
M,#<R-S4V13(P-3,T-34T13,-"E,Q,3,Y038T-34U,#)%,C R,#(P-#0T-30R
M-34T-S-!,C U-#8U-D1$- T*4S$Q,SE!-S0W,#-!,C W.#<X-S@R,#(P,C R
M,#<W-S,W,#8T,C W.$0V#0I3,3$S.4$X-#<X-S@R,#<W-C0V.3<R,C W.#<X
M-S@R,#(P,C U-39%-40-"E,Q,3,Y03DT-S V0S<U-C<R,#<R-C$V.39%,C V
M-S<U-C$V-S8U,D5%-0T*4S$Q,SE!030R,#(P-3,V-39#,T0V-S9&,D,R,#1$
M-C4V13<U,T0V-4(T#0I3,3$S.4%"-#<X-CDW-#)%,C R,#4P-D,V-38Q-S,V
M-3(P-S,V-3<T,34-"E,Q,3,Y04,T-S4W,#(P-S<V.39%-C0R1C(P,C W-#8U
M-D0W,#8U-S)$0@T*4S$Q,SE!1#0V,3<T-S4W,C8U,C V-C8Y-S(W,S<T,D4R
M,#(P-$4V1D5!#0I3,3$S.4%%-#(P-S(V,38Y-D4R,#<S-C4V13<S-D8W,C(P
M,C R,#(P-D$-"E,Q,3,Y048T,C R,#8V-D8W-39%-C0R,3(P,C R,#(P,C R
M,#(P,C!%,0T*4S$Q,SE",#0R,#(P,C R,#(P,C U,C8Q-CDV13(P-S,V-39%
```

```
M-S,V1D)"#0I3,3$S.4(Q-#<R,C T.30T,C V-C9&-S4V138T-#,W-39$-S4V
M0S8Q-T(-"E,Q,3,Y0C(T-S0V.3<V-C4R,#4R-C4V-C(P-3(V-3<S-C4W-#4R
M-C$V,@T*4S$Q,SE",S0V.39%,T$R,#4T-D8V-#8Q-SDR,#)$,D4R1#)$,C(R
M,$0T#0I3,3$S.4(T-#(P,C U.38U-S,W-#(P,D0R13)$,D0R,C(P-#,W-39$
M14,-"E,Q,3,Y0C4T,C R1#)%,D0R1#(R,C R,#(P,C R,#(P,C R,#(P,C!#
M-@T*4S$Q,SE"-C0R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,$5$
M#0I3,3$S.4(W-#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P1$0-
M"E,Q,3,Y0C@T,S R,#,R,S,R,#,T,S4R,#,V,S@R,#,Y,S S,3,Q,S-%,PT*
M4S$Q,SE".30S,3,S,S4S,3,U,S@S,3,X,S S,C,P,S,S,C,R,S4S,CA$#0I3
M,3$S.4)!-#,T,S@S,C,W,S S,C,Y,S,S,S,Q,S4S,S,S,S@R,#(P.3,-"E,Q
M,3,Y0D(T-$4T131%-#4R,#1%-#4T-31%-#4R,#(P-#4T-34S-#4X,0T*4S$Q
M,SE"0S0R,#4S-#4U,S4S-#4R,#(P-3,U,S4S-3<R,#4S-3<U,S-$#0I3,3$S
M.4)$-#4S-3<R,#(P-3<U-S1%-3<R,#1%-3<T131%-3<S,#,P,C@-"E,Q,3,Y
M0D4T,S S,#,R,S,S,#,T,S4S,#,V,S@S,#,Y,S S,3,Q,S,T,PT*4S$Q,SE"
M1C0S,3,S,S4S,3,U,S@S,3,X,S S,C,P,S,S,C,R,S4S,C)$#0I3,3$S.4,P
M-#,T,S@S,C,W,S S,C,Y,S,S,S,Q,S4S,S,S,S@T,#!#,C8-"E,Q,3,Y0S$T
M,3(Q,C!#,# P,# P,# P,# P,# P,# P,# Q,# P0@T*4S$Q,SE#,C0P
M,# P,#0P,# S,#(P,#%&,4,Q1C%%,48Q13%&,48Q13$R#0I3,3$S.4,S-#%&
M,44Q1C Q,#(P,# S,#0P-S8S,$,Q1C$W,T(P,# P0T8-"E,Q,3,Y0S0T,3<P
M,# Q,#$P,# P,# P,# P.#<X03A$.3 Y,SDP,#!!,@T*4S$Q,SE#-30U14)#
M13(V,3-&1$0X,T,R.4,W13(P03-&1#%&-#$Y1#8W#0I3,3$S.4,V-$,S,C$W
M1D9#03(T,#%%-48P,44S0D0S138P.#)$0S(S-D4-"E,Q,3,Y0S<T-T0Y1D,Q
M-#(Q0T9%03!%,4)&-40P,S@P1$4S0S8R0D4T.0T*4S$Q,SE#.#1%,# R-4-$
M1C@Q-C,S1#=#,C)#,#E%,40T,T$Q1D8T-C1##0I3,3$S.4,Y-#$X1D%!-#(W
M-SDY0D,U.#1$03,X-C9%-4)"-3DP-T1",D8-"E,Q,3,Y0T$T.#4V-S,Y0D%%
M-# V-3@Q.30W035&0C<X,C9#-#E!-C4R00T*4S$Q,SE#0C0S0D0Y.#<P-#5!
M0CA%-D$W1CDQ0C0U0S8Y.#=!,C1&.#$Q#0I3,3$S.4-#-$$V-#0Q03DY0S<R
M-3=",T$V-#@V1#@U0C U13=".3A#,# -"E,Q,3,Y0T0T1#(S,#9%141",S4Q
M,$8T13$P1C)!0S)&-S$Y,T-$,3%&1@T*4S$Q,SE#130T1D%$1C,W,#)%0T,Y
M,D0S.$0V1C,Q0C)%0S!%-3!!1D0V#0I3,3$S.4-&-$8Q,3,T1$-%.3 W,C)#
M-D0S,T0Q.$8P0S4R0C!%13,R13$-"E,Q,3,Y1# T-D,X140P-3,P1$5&0C%&
M,$%%-$,Q,CDQ0T8R1#<S0T%"0@T*4S$Q,SE$,30Y-#<V,CA!0D8U,3<T.3 X
M-39"-$5!-CDS-T0U.$(U-T(V#0I3,3$S.40R-# Y14)"-3,V-C@X040T.35#
M0C(Y-S=&-$%!-#@Q-D4Y03$-"E,Q,3,Y1#,T0C<U-3!".#A$-C,T-D$R0C<U
M.3=#.31!,31&-D$X-S0Y. T*4S$Q,SE$-#0R04,X.38Q-31"03E&-T(V13@P
M034T1#<X.39",S4P1#=!#0I3,3$S.40U-# P,#,P,#8U-C,V.#9&,C V1C8V
M-C8P1# P-D0V1C9%03<-"E,Q,3,Y1#8T-CDW-#9&-S(R,#9&-C8V-C!$,# V
M,S9&-D4W-C8U-S(S. T*4S$Q,SE$-S0W,S!$,# U-S<X,C U,S<T-C$W,C<T
M,C R.#,Q,D4S,#@W#0I3,3!$.40X-#,X,D4S,#0S,CDR13)%,D4P1# P,S@-
-"E,Y,#,P,# P1D,-"@I3
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

April 2000

Original source file: wxsig.0004
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0004

1. [wxsig] Call for Callsigns

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 1 Apr 2000 18:16:41 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74926-2000.04.01-19.10.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Can I please get callsigns from you all as you get your stations on the
air. It would be nice to know if you are seen by an igate too, that way I
can add your station to my list of stations on the air.

Currently I only have Russ and myself on the website.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] Re: Call for Callsigns

From: "KC5GOI" <kc5goi@tapr.org>
Date: Sat, 1 Apr 2000 21:28:12 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74942-2000.04.01-21.25.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, I will have mine on the air hopefully sunday evening. I have gotten
behind on projects since Fort Worth got hit by a tornado.   I happen to run
the local IGATE in North Texas.

73

Guy
KC5GOI

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, April 01, 2000 7:16 PM
Subject: [wxsig] Call for Callsigns

> Folks:
>
> Can I please get callsigns from you all as you get your stations on the
> air. It would be nice to know if you are seen by an igate too, that way I
> can add your station to my list of stations on the air.
>
> Currently I only have Russ and myself on the website.
>
> will
>
> ---
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> ---
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place

> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: kc5goi@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Re: Call for Callsigns

From: "Doug McKinney" <Design@mt.to>
Date: Sat, 1 Apr 2000 18:55:57 -0800
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74946-2000.04.01-21.54.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug KC3RL

----- Original Message -----
From: William Beals <wmbeals@compuserve.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Saturday, April 01, 2000 5:16 PM
Subject: [wxsig] Call for Callsigns

> Folks:
>
> Can I please get callsigns from you all as you get your stations on the
> air. It would be nice to know if you are seen by an igate too, that way I
> can add your station to my list of stations on the air.
>
> Currently I only have Russ and myself on the website.
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: Design@mt.to
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] Ops manual omissions

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 2 Apr 2000 08:56:50 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-74997-2000.04.02-09.51.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Russ has been having some problems uploading the new code using the MON08
programmer and has correctly pointed out that there needs to be quite a bit
of extra help in that area should something go wrong. I will try to get
some updates ready for that support.

will

```
------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

5. [wxsig] 4-line support and web tweek.

```
From: William Beals <wmbeals@compuserve.com>
Date: Sun, 2 Apr 2000 18:05:59 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75066-2000.04.02-19.02.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Folks:

I'm starting to work on the 4-line support (the displays did arrive a couple of days ago). For now I see little reason to change any of the screens except for the opening banner and the weather status screens. Cramming as much data into one screen as possible is an art, so any feedback is appreciated. These are of course best viewed in a monospace font.

I did updated just the internet support page on the website. It now includes Guys and Dougs callsigns, both aprs.net and findu.net, and I threw in links for WinAPRS, MacAPRS, and APRSdos.

will

```
-------------------------------------------

'  Will and Russ's   '
'  APRS Wx Station   '
' (c) Copyright 2000 '
'  CMI Productions.  '

'    Currently       '
'Temp ---oF L--- H---'
'Wind ---o --MPH G --'
'Rain -.--" 24Gust --'

'    Yesterday       '
'Temp L---oF H---oF  '
'Wind Gust -- MPH    '
'Rain -.--"          '

'       Rain         '
'Today -.-- Yest -.--'
'Month -.-- User -.--'
'                    '

'     Status         '
'mm/dd/yy hh:mm Zulu '
'hh:mm Local time    '
'Sample: xx/60       '

'  Error Counters    '
'Temp xxx Rain xxx   '
'Wspd xxx Wdir xxx   '
'                    '



------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
```

303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] WX station board

From: Russ Hummel <hummel@HSC.VCU.EDU>
Date: Mon, 03 Apr 2000 09:58:24 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75184-2000.04.03-08.58.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I built the T238 board this weekend. It all seems to work. I still need to make the blue wire change to improve the contrast on the LCD display. Found 1 mistake in the assembly directions The 4.7 ohm resister was listed as yellow,violet,black 47 ohms) instead of yellow, violet, gold. I had a little trouble figuring out which direction the 7805 was supposed to go in. The silk screen outline has to be looked at very carefully to see the thin white line used for orientation of the regulator. A thicker line on the silk screen would help with that. The other thing I had trouble with was figuring out which was pin 1 on the connector (J7) to the LCD display. After soldering the header in place all the pads looked round. I couldn't tell if there was a mark on the top of the board to mark pin 1 It may have been under the header body. At first I thought pin 1 on the LCD connector would have the same orientation as the 2 IC's (i.e. 1st lower left pin) However that was not the case. Pin 1 is the upper most right pin on the header. Otherwise the kit went together in about 4 hours. 2 hours to mount and solder all the parts on the main board, 1 hour to make the cable between the LCD and the main board, 1 hour to test and configure the system and get WX data. Overall a VERY NICE kit, good directions with a flare of a good ole Heathkit.
Any plans for a front panel board to mount the switches and lifetick LED to. I plan on finding a case to mount the unit in this week. I must say a very enjoyable weekend project. Now I can do something useful with my Dallas WX station. I will keep you posted on the final connection to my APRS station. 73 Russ Hummel WB4PGT
Russ Hummel CTA2RD
Biomedical Engineer & LAN Manager
Dept of Anesthesiology
Medical College of VA @ VCU
804-828-2212

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] FW: WX Kit switch part number

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 3 Apr 2000 10:34:27 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75187-2000.04.03-09.34.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I guess I am going to embarrass Aaron here after he successfully rolled his chair over one of his switches :-) (And I am sure NO ONE on this list has EVER done this :-).

Alas, I don't have any spare switches. Will or Russ, I did send extras to you all. Can one of you post a spare to Aaron?

Thanks!

- Steve

-----Original Message-----
From: Aaron Morrison [mailto:ae4ko@amsat.org]
Sent: Monday, April 03, 2000 12:40 AM
To: Steven R. Bible
Subject: WX Kit switch part number

I killed one of the switches (drop and roll, actually). It fell, I rolled back to find it and ran over it shattering it into nice small pieces. I can use a standard N.C. switch to get things to work, but at some

point would like to replace it. What part number did you use for the
switches so I can order one -- I typically use DigiKey (none of the
local stores have anything close).

I am very close to finishing -- the weekend was not productive; too
many other things going on. I should have it running monday or
tuesday. (I will probably watch the NCAA basketball final game)

Never mind about the screws I mentioned in an earlier mail.
Shortly after I mentioned that I didn't receive them I noticed that the
DB9's do not need them. Perhaps a note on the inventory page
would help others.

73
Aaron

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] Re: FW: WX Kit switch part number

From: "Aaron" <ae4ko@amsat.org>
Date: Mon, 3 Apr 2000 11:34:30 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75203-2000.04.03-10.33.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Alas, I don't have any spare switches. Will or Russ, I did send
> extras to you all. Can one of you post a spare to Aaron?
>
> Thanks!
>
> - Steve
>

No, thank you! <big grin> (I've never done that before; no--really!
<grin>)

I can order one, but I just wanted to make sure I had the right part
number (I was thinking about ordering some keycaps so I still need
to make sure I know what switch you used.)

Thanks all!
73

(Random Quote)
    Advertising (n): the science of arresting the human
    intelligence for long enough to get money from it.
           -- Stephen Leacock.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] Re: FW: WX Kit switch part number

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 3 Apr 2000 12:13:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75214-2000.04.03-11.13.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The part number of the switch is, from the Jameco Catalog P/N 161824 (see
page 39). I can't find out who the original manufacture is. And Jameco has
a $20.00 minimum order.

I haven't found key caps to fit this switch. I tried ordering P/N 155389
(same page) but the clip-on part inside the switch is too large for the
switch itself.

The reason for this type of switch is for the NO/NC part. Will needed to
disrupt power to the micro for reseting it into the debug mode. So the
choice was to make all five switches the same, even thought the front panel
switches only need to be NC.

If we design a front panel PCB, we need to find a switch/cap combo that
works well and looks nice.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Aaron
> Sent: Monday, April 03, 2000 11:35 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: FW: WX Kit switch part number
>
>
>
> > Alas, I don't have any spare switches. Will or Russ, I did send
> > extras to you all. Can one of you post a spare to Aaron?
> >
> > Thanks!
> >
> > - Steve
> >
>
> No, thank you! <big grin> (I've never done that before; no--really!
> <grin>)
>
> I can order one, but I just wanted to make sure I had the right part
> number (I was thinking about ordering some keycaps so I still need
> to make sure I know what switch you used.)
>
> Thanks all!
> 73
>
> ---
> (Random Quote)
>   Advertising (n): the science of arresting the human
>   intelligence for long enough to get money from it.
>   -- Stephen Leacock.
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] Re: FW: WX Kit switch part number

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Mon, 03 Apr 2000 16:25:06 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: <srbible@gate.net>
Message-ID: <LYR15067-75243-2000.04.03-15.25.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 4/3/00 12:13 PM, Steven R. Bible at srbible@gate.net wrote:

> The reason for this type of switch is for the NO/NC part. Will needed to
> disrupt power to the micro for reseting it into the debug mode. So the
> choice was to make all five switches the same, even thought the front panel
> switches only need to be NC.

 Huh???   "NC" or "NO" ??????

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Re: FW: WX Kit switch part number

From: "Aaron" <ae4ko@amsat.org>
Date: Mon, 3 Apr 2000 17:10:38 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75263-2000.04.03-16.09.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> on 4/3/00 12:13 PM, Steven R. Bible at srbible@gate.net wrote:
>
> > The reason for this type of switch is for the NO/NC part. Will
> > needed to disrupt power to the micro for reseting it into the debug
> > mode. So the choice was to make all five switches the same, even
> > thought the front panel switches only need to be NC.
>
>
> Huh???   "NC" or "NO" ??????
>

Actually the answer is Yes. The up/down/sel/menu buttons are
NO, but the reset switch is NC. The switches picked for this
project can be used either way (hence the orientation; bad thing is
that they don't work when they are on the floor <grin>)

73

(Random Quote)
Getting caught is the mother of invention.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

12. [wxsig] Using the KPC3 GPS port for weather

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Mon, 03 Apr 2000 20:37:44 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75341-2000.04.03-19.37.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK here is the deal!

 In the version kantronics KPC-3+ version 8.3 software which implemented the
second serial port there was also added a command option in the LTP that
permits you to CLEAR the buffer after transmission. Now, what this means is
you can set the buffer to transmit every 60 seconds or even 30 seconds and
tell it to CLEAR after transmit. Then when it comes back 30 or 60 seconds
later to transmit the buffer and it is empty, IT WILL NOT TRANSMIT. Then
several minutes later when the next weather summary statement comes through,
it will go into the buffer and it will transmit it within 30 or 60 seconds
(or whateveryou select) and then CLEAR it and go on waiting for data to
transmit.

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Re: FW: WX Kit switch part number

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 03 Apr 2000 19:20:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75348-2000.04.03-20.20.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve,

Yes, I can send him a couple. What's the address? I don't have padded
envelopes so I'll just use lots of paper.

Russ

"Steven R. Bible" wrote:

> I guess I am going to embarrass Aaron here after he successfully rolled his
> chair over one of his switches :-) (And I am sure NO ONE on this list has
> EVER done this :-).
>
> Alas, I don't have any spare switches. Will or Russ, I did send extras to
> you all. Can one of you post a spare to Aaron?
>
> Thanks!
>
> - Steve
>
> -----Original Message-----
> From: Aaron Morrison [mailto:ae4ko@amsat.org]
> Sent: Monday, April 03, 2000 12:40 AM
> To: Steven R. Bible
> Subject: WX Kit switch part number
>
> I killed one of the switches (drop and roll, actually). It fell, I rolled
> back to find it and ran over it shattering it into nice small pieces. I
> can use a standard N.C. switch to get things to work, but at some
> point would like to replace it. What part number did you use for the
> switches so I can order one -- I typically use DigiKey (none of the
> local stores have anything close).
>
> I am very close to finishing -- the weekend was not productive; too
> many other things going on. I should have it running monday or
> tuesday. (I will probably watch the NCAA basketball final game)
>
> Never mind about the screws I mentioned in an earlier mail.
> Shortly after I mentioned that I didn't receive them I noticed that the
> DB9's do not need them. Perhaps a note on the inventory page
> would help others.
>
> 73
> Aaron
>
> ---
> You are currently subscribed to wxsig as: kb0tvj@bouldernews.infi.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] Going LOS

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 3 Apr 2000 21:37:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75361-2000.04.03-22.42.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Off on my business trip tomorrow morning. I'll be out of email contact
until Monday night 4/11.
Don't find too many more bugs while I'm out!

Russ H: Glad things went reasonably smooth on the build. I've never had
the pleasure of a Heathkit kit, my younger days were spent outside the US.
 The original instructions were assuming a 2x7 header on a 2x20 display, so
that part is not as polished as it should be. I have the assembly manual
now and your comments are very good.

Aaron: Russ and I both have extra switches. Thanks Russ for volunteering

to send some. Yes, Steve B found a single switch to satisfy both the N.O.
and N.C. configurations. I need the N.C. configuration for the "reset"
switch that actually removes power instead of asserting reset. This is
weird, but important to the functionality of the micro. It treats resets
differently power-ups and I need power-ups to get into debug mode.

Brian: Looks like a great solution! Probably enough to convince me to
spring for the firmware upgrade on my KPC3+'s. Do I need to send a special
command to clear the buffer? Are there any issues if you are in the middle
of sending a message to the buffer when the transmit time happens. Does it
wait for the incoming message to complete?

All: I got most of the 4-line LCD support coded up yesterday. It is
implemented as per my email on Sunday. In general it looks OK, but four
lines of data looks a LOT more crowded than the original two-line display.
 Maybe it will take just a bit of getting used to.

See y'all next week...

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] Rain Gauge Info

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 03 Apr 2000 21:53:33 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75365-2000.04.03-22.53.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have the rain gauge hooked up and working inside. It seems to work
fine with version 1.08 of Will's software. I've assembled two of the
Dallas Semiconcuctor rain gauges and had both of them work right away.
The calibration is tedious, but very important. You drip 16 oz. of
water into the gauge and it should count to 1 inch of rain. Takes
multiple trials and adjustments to make it happen.

Some people have reported problems not getting the rain gauge to count.
Here's Dan Awtrey's procedure for testing to see if there is a problem
with the rain gauge. This was on the Dallas Semi reflector today.

Russ
kb0tvj

> From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> Sent: Monday, April 03, 2000 9:50 AM

> Subject: RE: [weather] Rain gauge
>
> Can you provide more information about the rain gauge problem? If the
> weather station stops working when the rain gauge is plugged in, the
> connections are likely crossed. Try swapping them. If the label for
> the rain gauge appears, but always shows zero, the reed switch may be
> bad.
>
> Both of these problems can be checked in TMEX iButton Viewer. First
> turn on TMEX with just the DS9097U adapter plugged in. You should see
> an ID address ending in -09 in the left hand panel. This is the
> address for the adapter. When you plug in the rain gauge (by itself)
> you should see two new ID addresses (-12 and -1D) appear in the left
> pane. If the -09 disappears, the cable connections are crossed. Swap
> them and try again. When you find the new addresses, double click on
> the one ending in -1D and open the counter window. Set the sample rate

> for counter 15 to 1 per second and tip the bucket. You should see the

> count increment each time the bucket tips. If not, the reed switch is
> likely bad. Send an email to [dang.nguyen@dalsemi.com] and request a
> replacement rain gauge interface board.
>
> The weather station board is programmed and will work with software
> from Texas Weather Instruments, Inc.
>
> Dan Awtrey   Staff Engineer
> Dallas Semiconductor   Phone: 972-371-6297
> Building C   FAX: 972-371-3715
> 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> Dallas, TX 75244-3292
> http://www.ibutton.com
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

16. [wxsig] Re: Going LOS

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Tue, 04 Apr 2000 15:58:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75462-2000.04.04-14.58.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 4/3/00 11:37 PM, William Beals at wmbeals@compuserve.com wrote:

> Brian: Looks like a great solution! Probably enough to convince me to
> spring for the firmware upgrade on my KPC3+'s. Do I need to send a special
> command to clear the buffer?

  LTP command has a CLEAR sub-option

>... Are there any issues if you are in the middle
> of sending a message to the buffer when the transmit time happens. Does it
> wait for the incoming message to complete?

  I have no idea ... but my take is that until the whole command (read that
as line with an EOL character) is in place, it doesn't get 'interpreted' and
placed in the buffer. While it is actually being moved from input buffer to
LT 1 or whatever number 1,2,3,4) the TNC is doing THAT not transmitting. So
I would guess the answer is no!

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

17. [wxsig] Rain Guage Arrived

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 4 Apr 2000 19:00:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75483-2000.04.04-18.00.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Received my rain guage today. Man, that sucker is big! The peet brothers
rain guage is about the size of a tin of soup. The Dallas rain guage is
about the size of a #10 tin.

Holly cow.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] FW: WXSTN Cables schematic

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 4 Apr 2000 19:00:44 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75484-2000.04.04-18.01.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John has updated the schematic 2 of 2 page. This is preliminary. I
suggested to him that he add the signal names. For the LCD they are:

Note: the "sub" refers to subscript lettering.

```
pin  description
---  -----------
 1    V sub SS - Ground
 2    V sub DD - Power Supply +5V Power
 3    V sub LS - Contrast Adjustment Voltage
 4    RS - Register Select Signal
 5    R/W - Read/Write Select Signal
 6    E - Enable
 7    DB sub 0 - Data I/O
 8    DB sub 1 -  "
 9    DB sub 2 -  "
10    DB sub 3 -  "
11    DB sub 4 -  "
12    DB sub 5 -  "
13    DB sub 6 -  "
14    DB sub 7 -  "
15    V sub LED+ - LED Power Supply (+)
16    V sub LED- - LED Power Supply (-)
```

Please comment on the schematic.

- Steve
[Attachment: WXSTNCBL.PDF; application/octet-stream; 12,179 bytes]

19. [wxsig] Re: Rain Guage Arrived

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 04 Apr 2000 19:13:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75503-2000.04.04-20.14.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Steven R. Bible" wrote:

> Received my rain guage today. Man, that sucker is big! The peet brothers
> rain guage is about the size of a tin of soup. The Dallas rain guage is
> about the size of a #10 tin.

I haven't seen the Peet rain gauge. The commercial gauges that we use where I
work (Forecast Systems Lab/NOAA in Boulder, CO) are the size of the the Dallas
Semi ones. I'm sure that the variation in rain measurements is reduced by
using a larger collecting area.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

20. [wxsig] Re: Rain Gauge Info

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Tue, 4 Apr 2000 23:38:56 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75526-2000.04.04-22.39.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 3 Apr 2000, at 21:53, Russ Chadwick wrote:

> I have the rain gauge hooked up and working inside. It seems to work
> fine with version 1.08 of Will's software. I've assembled two of the
> Dallas Semiconcuctor rain gauges and had both of them work right away.
> The calibration is tedious, but very important. You drip 16 oz. of
> water into the gauge and it should count to 1 inch of rain. Takes

> multiple trials and adjustments to make it happen.
>
> Some people have reported problems not getting the rain gauge to
> count. Here's Dan Awtrey's procedure for testing to see if there is a
> problem with the rain gauge. This was on the Dallas Semi reflector
> today.
>
> Russ
> kb0tvj
>

You are correct, it _is_ tedious! However, it's fairly easy to do and
I did everything in about 3hrs (2hrs for calibrating) I think I went
through about 10 or 12 iterations before I was sure it was right.

The only caveat is that the instructions were not completely clear
on how to mount the pcboard (a picture would have been nice, and
I should have taken a digital one before it went on the pole), so
once I figured out how they placed the magnet on the bucket the
rest fell into place.

I don't know if we are in the business of supplementing Dallas'
documentation, but perhaps some pictures of semi-assembled kits
on the web site might help the visual learners out there.

73
Aaron

Random Quote:

I am Baltar of Borg. The Galactica must be assimilated!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] Re: Ops manual omissions

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Tue, 4 Apr 2000 23:51:11 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75528-2000.04.04-22.51.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 2 Apr 2000, at 8:56, William Beals wrote:

> Folks:
>
> Russ has been having some problems uploading the new code using the
> MON08 programmer and has correctly pointed out that there needs to be
> quite a bit of extra help in that area should something go wrong. I
> will try to get some updates ready for that support.
>
> will

I upgraded my code tonight to 1.08.0c (after a couple unsuccessful
tries at using MON08 under dosemu in Linux. Jury is still out on
that; I think I can get it to work.) and found that the only way to get
to the monitor was to apply power, push and hold up/down, and
then press the reset button. The ops manual instructs the user to
hold the buttons and then apply power -- I never got it to work that
way.

73
Aaron

Random Quote:

They all stopped arguing as Don fired up his chain saw and growled...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

22. [wxsig] Re: Call for Callsigns

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Tue, 4 Apr 2000 23:59:54 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75530-2000.04.04-23.00.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 1 Apr 2000, at 21:28, KC5GOI wrote:

> Will, I will have mine on the air hopefully sunday evening. I have
> gotten behind on projects since Fort Worth got hit by a tornado.   I
> happen to run the local IGATE in North Texas.
>
> 73
>
> Guy
> KC5GOI

I may have found a kindred spirit! <hehe>

I finally have the board running with my TNC, and I also happen to
run the local IGate here in Orlando. ;-)

Right now it is running as AE4KO-1

73
Aaron

Random Quote:

I am Homer Simpson of Borg. Prepare to be assim ... o-o-o-h, donuts!!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Re: Rain Gauge Info

From: "Steven R. Bible" <srbible@gate.net>
Date: Wed, 5 Apr 2000 10:03:04 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-75595-2000.04.05-09.03.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> The only caveat is that the instructions were not completely clear
> on how to mount the pcboard (a picture would have been nice, and
> I should have taken a digital one before it went on the pole), so
> once I figured out how they placed the magnet on the bucket the
> rest fell into place.
>
> I don't know if we are in the business of supplementing Dallas'
> documentation, but perhaps some pictures of semi-assembled kits
> on the web site might help the visual learners out there.

Aaron, I started to assemble my rain guage last night and the instructions
were not that clear. I too was hoping for a picture. So I checked the
Dallas weather web site, and the pictures are there. To bad Dallas didn't
put them in the paper ones they sent. Maybe an after thought on their part?

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] Info on reed switches in 1-Wire wx station

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 08 Apr 2000 21:16:25 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76245-2000.04.08-22.17.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This item on erratic wind speeds appeared on the Dallas Semi [weather]
reflector. It is from Dan Awtrey who designed the 1-Wire weather
station. The part on reed switches is particularly interesting.

Russ
kb0tvj

> -----Original Message-----
> From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> Sent: Friday, April 07, 2000 1:50 PM
> To: 'Nathan Parker'
> Cc: 'weather@ibutton.com'
> Subject: [weather] RE: Erratic wind speeds
>
> In regard to reports of the wind speed sensor reporting erratic wind
> speed. There are three basic possiblities for the cause.
>
> 1. The reed switch. Experiments with reed switches show that
> activation via permanent magnet is inherently without bounce. You can
> appreciate this by considering how a reed switch works. The tines
> (contacts) are cantilevers formed using magnetic material. As the
> magnetic field of the permanent magnet increases with the approach of
> the wind speed rotor, the flux per unit area is concentrated within
> the gap (~.005") at right angles between the tines. In effect, the
> ends of the tines act as if they were north and south poles. Under a
> microscope, you can see the tines respond slightly as the magnet is
> brought within the minimum activation distance. When the magnetic flux

> exceeds a certain value dependent upon the magnet and the reed switch
> properties, the tines close. At this time, the magnetic flux in the
> tines straightens out, flattens, and becomes parallel to the tines.
> This reduces the flux per unit area to a minimum while increasing the
> force holding the tines together. (I suspect there will be lots of
> comments and questions about this as the literature on the subject is
> poor).
>
> Also bear in mind that by design the anemometer cannot oscillate back
> and forth across the reed switch. However, the reed switch CAN be
> activated by shock in the plane that passes throught the gap, or
> presumably vibration at the resonant frequency.
>
> 2.Voltage on the 1-Wire bus. If the voltage on the bus is not stable,
> this could conceivably affect the count. The voltage on the DATA line
> should be 5V referenced to GND. If it is not, recheck the voltage at
> the DS9097U with nothing plugged into the RJ11. If it is 5V, suspect
> the DS9502 on the weather station board.
>
> 3.The PC. Wind speed is calculated by measuring the counts per time
> interval plus some constants. If the PC varies the time interval that
> it uses to calculate wind speed, the result will be in error. For
> example, if the processor skipped one interval, the reported wind
> speed would jump to twice the actual value. Note that other software
> running on Windows can cause the time interval used to vary.
>
> Comments?
>
> Regards,
>
> Dan Awtrey Staff Engineer
> Dallas Semiconductor Phone: 972-371-6297
> Building C FAX: 972-371-3715
> 4401 S. Beltwood Pkwy. E-mail: dan.awtrey@dalsemi.com
> Dallas, TX 75244-3292
> http://www.ibutton.com
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] [Fwd: FW: [weather] RE: reed switches vs Hall effect]

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 10 Apr 2000 17:07:55 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76633-2000.04.10-18.08.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This item appeared on the Dallas Semi e-mail reflector today. It gives
an explanation of why they chose magnetic reed switches in the design of
the 1-Wire weather station.

Russ
kb0tvj

26. [wxsig] Welcome Joe Dorn, W5VEX

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 10 Apr 2000 20:56:44 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76650-2000.04.10-19.57.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Welcome a new beta tester, Joe Dorn, W5VEX, from Belton, Texas.

Joe, I mailed your beta kit today.

I mailed two more beta kits last week to Jim and Gerald. Have you guys got
them?

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

27. [wxsig] resend - Extended Temp LCDs

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 10 Apr 2000 20:57:21 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76651-2000.04.10-19.58.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The beta kits are coming with LCDs that are extended temperature. What this
means is that the contrast pin of the LCD (pin 3) needs a negative voltage.
The problem is that when we designed the T238, we did not account for this.
Thus there is a "blue-wire" change needed to the T238 to accomidate this.

First, the trace between V1 pin 3 and J7 pin 1 needs to be cut. See
t238lcd1.gif (Top view of PCB) for the location of the cut. Becareful as
the trace is very close to another that you do not want to cut.

Second, solder a wire between U4 pin 6 and V1 pin 3. See t238lcd2.gif
(Bottom view of PCB) for the location of the wire.

This mod steals -8V DC from the MAX232 chip and applies it to one side of
the contrast pot. Center the pot prior to power on. The voltage from the
wiper of the pot will need to be approximately -0.5V to get a good contrast
setting on the LCD.

- Steve, N7HPR
[Attachment: t238lcd1.gif; image/gif; 14,547 bytes]
[Attachment: t238lcd2.gif; image/gif; 31,824 bytes]

28. [wxsig] resend - WXSTN Cables schematic

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 10 Apr 2000 20:59:52 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76652-2000.04.10-20.00.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John has updated the schematic 2 of 2 page. This is preliminary. I
suggested to him that he add the signal names. For the LCD they are:

Note: the "sub" refers to subscript lettering.

pin	description
1	V sub SS - Ground
2	V sub DD - Power Supply +5V Power
3	V sub LS - Contrast Adjustment Voltage
4	RS - Register Select Signal
5	R/W - Read/Write Select Signal
6	E - Enable
7	DB sub 0 - Data I/O
8	DB sub 1 - "
9	DB sub 2 - "

10   DB sub 3 - "
11   DB sub 4 - "
12   DB sub 5 - "
13   DB sub 6 - "
14   DB sub 7 - "
15   V sub LED+ - LED Power Supply (+)
16   V sub LED- - LED Power Supply (-)

Please comment on the schematic.

- Steve
[Attachment: WXSTNCBL.PDF; application/octet-stream; 12,179 bytes]

29. [wxsig] resend - Assembly and Operations Manuals

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 10 Apr 2000 21:01:20 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76653-2000.04.10-20.01.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was hoping that I would find time to update the Assembly and Operations Manual for the beta testers. Alas, other priorities keep interfering.

Aaron emailed me and he now has his kit. I've emailed him the draft manuals that we have.

I generally pleased with the Assembly Manual. The one thing that lacks in it is how to put together the LCD cable and connect the LCD to the kit. In very general terms, here's how...

- The 1x17 male header needs to have one of the pin trimmed off to make it a 1x16 header.

- Position the 1x16 male header such that the pins stick out the back of the LCD (the opposite side of the LCD display). Solder the 1x16 male header to the row of holes in the top of the LCD (a picture would help show you where. Trust me, there's only one row of holes :-).

- To assembly the cable, separate the wires on the end of the cable without a connector approximately 1 to 1-1/2".

- Strip the insulation off the ends of the wires approximately 1/8".

  NOTE: There are two types of crimp pins in the kit. 16 pins with a gold color and 2 with a dull silver color.   Separate this pins and set aside the dull silver pins for later steps. The 16 gold colored pins will be used now.

- Crimp a female pin to the end of the wires. Note that the ribbon cable has 14 conductors. Crimping can be down with a crimp tool or a pair of needle nose pliers. If you crimp the pins with needle nose pliers, it is best that you solder the pin to the wire using a very small amount of solder. You do not want to fill the connector pin with solder. (The crimp tool can be order from Jameco.)

- Next you will insert the pins into the connector housing. Read the following directions carefully and make certain you understand them before proceeding.

  - Note, the housing is a 17-pin housing. You want to instert the pins into the first 14 places. You can start from either end of the housing, simply label that end as pin 1.

  - To locate pin 1 on the rainbow colored ribbon cable, look at the 2x7 IDC connector on the end. There is a small arrow that points toward the connector end and points to pin 1. Typically, for a rainbow colored cable, pin 1 is the color brown. On grey cables, it is the red stripe.

  - Insert the connector on the wire of pin 1 into the 17-pin connector housing at one end. Label this end as pin 1. This will mate with the LCD display header pin 1. (a picture would help here). Insert the pin into the connector where the open side of the pin fits toward the connector housing tab. The tab holds the pin in place. Insert the pin all the way in until the tab locks onto the pin.

  - Continue inserting the wires one at a time, move to the next pin and wire side-by-side. (picture)

- When all 14 pins have been inserted, there will be 4 open spaces in the connector housing at the opposite end where you started (pin 1).

- Locate the red and black wire in the kit (sorry, not in the beta kits. Find some 28 guage wire, preferably different colors).

- At this point you should have 2 gold colored pins and 2 dull silver pins. Crimp a gold colored pin on one end of the red wire and black wire. Solder.

- On the opposite end of the red and black wire, crimp the dull silver pins. Solder.

- Insert the red wire, gold color pin into the 17-pin connector housing at position 15, right next to the last wire on the ribbon cable.

- Insert the black wire, gold colored pin into the 17-pin connector housing at position 16, right next to the red wire.

- Insert the red wire, dull silver pin into the polarized 2-pin Molex connector according to the figure (need to draw figure - looking at the end of the connector where the pins go in, and place the fins down, the red wired pin goes to the right. The goal here is that the connector plugs into the PCB that the polarity match the silk screen.)

- Insert the black wire, dull silver pin into the polarized 2-pin Molex connector according to the figure (goes to the left).

WARNING: Make certain that the polarized Molex connects to the PCB such that tthe red wire goes toward the silkscreened "+" sign.

- At this point, the 17-pin connnector has one open connector position. This is okay. Plug the connector into the LCS matching pin 1 on the connector to pin 1 on the LCD (need a picture).

- Plug the polarized molex into J8. OBSERVE POLARITY, RED TO "+". RED ON THE LCD GOES TO PIN 15.

That's it in a nut shell. Lots of words to explain a short process. Pictures will help. Please let me know how these work for you and how to make them better. We'll fold these steps into the assembly manual as soon a possible.

This connector was the best we could find. If you know of a better system, please let us know.

Any questions, ASK! We want to avert a disaster. The directions need to do that the best that they can.

The ops manual still needs work and I'll try to get to it. I have lots of notes to move it along. If I can only find the time :-)

- Steve

You are currently subscribed to wxsig as: srbible@gate.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] Assembly Manual

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 10 Apr 2000 21:04:27 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76654-2000.04.10-20.05.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Attached is the draft assembly manual. I am posting it to the list for the benefit of the new beta testers. I'll also be resending two other emails on how to connect the LCDs and the extended temp LCD mod for the PCB. There's one more mod that Will made for debug mode.

- Steve
[Attachment: T-238 assembly.doc; application/msword; 105,472 bytes]

31. [wxsig] Back

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 10 Apr 2000 21:34:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76700-2000.04.10-22.29.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Back from France. One neat thing was to be able to dial into the net from over there and check the weather at my house. Seriously high nerd-factor ratings!

I am still slugging through email, with jetlag further complicating things. Hopefully more concrete answers tomorrow night on all the issues that came up while I was gone.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] Welcome Back and a timekeeping query

From: "Aaron" <ae4ko@amsat.org>
Date: Tue, 11 Apr 2000 10:01:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76764-2000.04.11-09.00.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Folks:
>
> Back from France. One neat thing was to be able to dial into the net
> from over there and check the weather at my house. Seriously high
> nerd-factor ratings!
>
> I am still slugging through email, with jetlag further complicating
> things.
> Hopefully more concrete answers tomorrow night on all the issues that
> came
> up while I was gone.
>
> will

Welcome home! I hope the wine and cheese lived up to expectations!

Here's something I noticed this morning on the way to work and I think you can shed some light on the subject... I have noticed that the clock is not keeping good time. Not having looked at the spec sheet for the Motorola chip, I don't know off hand if it contains a real-time clock. How are you keeping time? Are you using an interrupt routine like the key/button handler or are you using a timed loop? I am assuming the xtal oscillator is ok and this is only a software problem for now.

Here's the delta: I set the wx station to correct time at 19:00 EDT yesterday, and this morning at 09:47 EDT the station reads 13:35 UTC -- a difference of approx 12mins in a little under 15hrs

Thanks.
Aaron

P.S. I don't remember seeing an answer/confirmation to the
apparent discrepancy between the schematic and the board
regarding the +5V feed to the one-wire RJ45 -- the kit and
instructions seem correct, but the schem shows that line going to
pin 2 of the RJ45, not pins 1 or 5 as layed out on the board. Did I
miss that?

(Random Quote)
Assembler Command: CFP: Change and Forget Password

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

33. [wxsig] Item on wx station plastic housing

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 11 Apr 2000 19:29:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-76853-2000.04.11-20.30.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This item appeared on the Dallas Semi e-mail reflector. There had been
a message saying that the plastic housing would not last in the sun if
it wasn't painted.

Russ
kb0tvj

> -----Original Message-----
> From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> Sent: Tuesday, April 11, 2000 11:58 AM
> To: 'weather@ibutton.com'
> Subject: [weather] RE: UV protection for weather station housing
>
> Concerning recent comments about the weather station housing such as:
>
> >... with the application of a sealer, some UV-protective paint,...
> >I'm worried about the housing though... it's PVC isn't it?
>
> Texas Weather Instruments, Inc. designed and developed the plastic and

> hardware for the station. The plastic is a UV inhibited nylon and the
> hardware is stainless steel. Units have been in service for years
> around the world including Antarctica and on balloons in the upper
> atmosphere where I'm told UV destroys their fabric in about ten days.
>
> Other than sealing the unit to help keep out moisture (and insects,
> dirt etc.) no special paint or coating is required.
>
> Regards,
>
> Dan Awtrey   Staff Engineer
> Dallas Semiconductor   Phone: 972-371-6297
> Building C   FAX: 972-371-3715
> 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> Dallas, TX 75244-3292
> http://www.ibutton.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

34. [wxsig] software & Rain gage

From: Russ Hummel <hummel@HSC.VCU.EDU>
Date: Thu, 13 Apr 2000 10:24:26 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77190-2000.04.13-09.25.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am currently Debugging my rain gage and calibrating it. I see there is a
REV 1.8x update for the WX system. Where is this available from ? I'd be
interested in updating to handle the rain gauge. Also does the WX station
handle a 2nd temperature sensor (DS18s20). Any info would be
appreciated.
Russ Hummel WB4PGT

Russ Hummel   CTA2RD
Biomedical Engineer & LAN Manager
Dept of Anesthesiology
Medical College of VA @ VCU
804-828-2212

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

35. [wxsig] RE: software & Rain gage

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 13 Apr 2000 22:25:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77403-2000.04.13-23.24.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ H:

I did not put the 1.08 release up on the website as it wasn't tested as
well as I felt necessary. Trouble was that I was heading off for a
week-long business trip. I just posted it on this reflector. Here it is
again.

will

-----Original Message-----
From: Russ Hummel [SMTP:hummel@HSC.VCU.EDU]
Sent: Thursday, April 13, 2000 8:24 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] software & Rain gage

I am currently Debugging my rain gage and calibrating it. I see there is a
REV 1.8x update for the WX system. Where is this available from ? I'd be
interested in updating to handle the rain gauge. Also does the WX station
handle a 2nd temperature sensor (DS18s20). Any info would be
appreciated.
Russ Hummel WB4PGT
Russ Hummel   CTA2RD
Biomedical Engineer & LAN Manager
Dept of Anesthesiology
Medical College of VA @ VCU
804-828-2212

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 Wx08.s19
M4S$Q,T9&1$,X,# P.# P-#@P,#@X,#!#.# Q,#@P,30X,#$X.# Q0T$Q#0I3
M,3$S1D9%0S@P,C X,#(T.# R.#@P,D,X,#,P.# S-#@P,S@X,#-#.3$-"E,Q
M,#=&1D9#.# T,$8P,# T1 T*4S$Q,T8P,#!#0T8P,#E#0T8Q0D5#0T8Q0T%#
M1$8P,3=#1$8P-$1#1#A!#0I3,3$S1C Q,$8Q-T%#1$8P.# R,#,R,T8P,#9%
M,#<P-#-&,#$V13@P,$,-"E,Q,3-&,#(P,#4V13 V,#(S1C V,T8P,S9%1D8P
M-S$P,49"-C Q031$0PT*4S$Q,T8P,S W.$$Q-C R-C$T038T,$(W,3-!-C!#
M0C<Q-$$V,#!"-SA&#0I3,3$S1C T,#$U038S,D(W,3E#1$8R03DX,3E#0T,X
M,#0T-#5&,#<V,T8-"E,Q,3-&,#4P0T1&,$8T0T1&,3)#,C1&-4$Q-3,R-C$S
M0T1&,3)#,C1"1 T*4S$Q,T8P-C!%0T$Q-#@R-C!!0T1&,3)#,C1%,T$Q,$0R
M-C Q.#%#1#@S#0I3,3$S1C W,$8Q,D,R-$0Y,C!&.34S-38S,3)%,S S,3)%
M,S P1# P.#4-"E,Q,3-&,#@P-D4X,#0X,T8T.4$V-3-#1$8Q,#%!-C0Q0T1&
M,3 Q0C9!00T*4S$Q,T8P.3 T.$-$1C$P-T(V-#E#1$8Q,#=!-C!$0T1&,3 Q
M0T1&,39"#0I3,3$S1C!!,#)#03$U,S(V-#E#1$8Q,D-!,30T,C8T,C-&-$5#
M1$8Q-$(-"E,Q,3-&,$(P-$8R-#-"0D4T13A#13<T,#-#-$5"-C1%03$P.#(V
M144Y- T*4S$Q,T8P0S!#1$8Q,D-"-S1%0T1&,3)#03$P1#(V,C)#1$8Q03$R
M-$5!#0I3,3$S1C!$,#$W0C8T.4%",#A"-S0Y0C8T.$$Y,#!"-S0X0C8T14$Q
M,3@-"E,Q,3-&,$4P-$0R-T$R03$U.#(V,#<X,30U1C!&,$-$1C!&-#(P1D4V
M0@T*4S$Q,T8P1C U,S0V,$0P,$8V,C<P.4(W,3@P1#$V1D1!1C Q,C!&-#A$
M#0I3,3$S1C$P,#@Q0C<Q.#!$,39&1#@Q.#<V,D$T,$8Y-SA#1#9&,3%#-C@-
M"E,Q,3-&,3$P041%1C@V030P1CDW1#9&,3%#041%-C@Q,S S,3,R,S-#,@T*
M4S$Q,T8Q,C S-#,U,S8S-S,X,SDV,38R-C,V-#8U-C8S1C1",T8T03)##0I3
M,3$S1C$S,#-&-$-"-C$V030R,#(V,3,S0S1",C9&-C-#-$$R-D8R,S8-"E,Q
M,3-&,30P,T,T0T(V-$-!,3 X,C9%031&.3@X,4(V,3@Y.3@Q0T0U0@T*4S$Q
M,T8Q-3!&,3)#,C0Q-4-$1C$V03(T,3 V,D(W-$9#1$8Q,D,R-#@S#0I3,3$S
M1C$V,# X0T1&,39!,C0P,T)"-$8Y.3@Q.$-!13!&1#%&,3%#1CD-"E,Q,3-&
M,3<P,C<P-35!,D%&.#DX.#$Y1CDY.#%#1$8Q.#<T1D-$,#%!1@T*4S$Q,T8Q
M.#!#,#(T,#$X,4-#1C!%.#0U,#%#,#,U-$$T-48Q1# W138X#0I3,3$S1C$Y
M,#1#.$(X.34U-$$U131#,S4T03@X.$$V-48R-#DR-D5&-T,-"E,Q,3-&,4$P
```

```
M.#$T-3 Q0S S-31!-#5&,C0Y-T4T0SA".#DU-31!-45&00T*4S$Q,T8Q0C T
M0S,U-$$X.#A!-C5&,D$Y,C9%1D-$,#%#,#@Q,S4T.$-$#0I3,3$S1C%#,$-$
M1C$X-T$V,#$Y0D-$,#%#,#@Q.4(S-30X0T-&,4$Q,D8-"E,Q,3-&,40P-$0R
M-C%#-D4X,#0X,T8T.4%$,34R-#$R-D4X,#0Y040P,@T*4S$Q,T8Q13 P13(T
M,$(S1C0Y,T,T.$(V-#A!,48P,C9%0CDY.#%!1#9"#0I3,3$S1C%&,#)&,C4R
M0T$V,#)#-T9%,#A#-D9&-T4U-30X1C=!-C!!.$8-"E,Q,3-&,C P040S1D$V
M,$%#-T9%,#A!-C Q040R.$$V,#A#-T9%,#@Y00T*4S$Q,T8R,3!!-C U040R
M1$$V,#!#-T9%,#A!-C Q040R-$%$,#$X,31"#0I3,3$S1C(R,#4U-#A&-C0S
M,C8P0D%&,#$Y1D(X-#E!,3@P,C9&,SDY0C -"E,Q,3-&,C,P.#$Y.#@Q-48X
M0T%&,#$V-3 S13@R-D8Y-$$R-D8T.$,S-@T*4S$Q,T8R-# X,3E$.40Y1#E$
M-$$R-D8Y.#%!-C Q0S=&13 X0S9&1D$R#0I3,3$S1C(U,#=%-34T.$8W038P
M04%$-#E!-C Y0S=&13 X038P-4%$,44-"E,Q,3-&,C8P-# U-30X,S4T030U
M,# T,#=%-$,X0C@Y-34T035%-$,Y,@T*4S$Q,T8R-S S-31!038Q14%$,D(X
M.#A!.49!-# W03$P,#(V13E!-D)$#0I3,3$S1C(X,# X0S=&13 X038P-4%$
M,3E!-C P0S=&13 X038P,4%$-D0-"E,Q,3-&,CDP,3 Y.3@Q-48X0T%&,#$V
M-3 S13@R-D8Y-$$R-D8T.$,T-@T*4S$Q,T8R03 X,3E$.40Y1#E$-$$R-D8Y
M.#$V13@P-$0S1C1"038R.$4X#0I3,3$S1C)",$-$1C)%.3-&-$1!-C(X0T1&
M,D4Y038Q-$-$1C)%.4$V.3@-"E,Q,3-&,D,P,$-#1$8R13E!-C V0T1&,D4Y
M038P,D-$1C)%.4$V,#$S0@T*4S$Q,T8R1#!#1$8R13DT-48S,D(S-30X,T8T
M0D$V.#!!1#!"040S-C4W#0I3,3$S1C)%,#-&-$)!-D,P040P,T%$,D4X,3DW
M0C8P-$%!1D5"-S T-D$-"E,Q,3-&,D8P.49!-$8P0D$T0D(W,# Q-C P-C(V
M,C$W,# S1#1$,C8W00T*4S$Q,T8S,# P1CE&-C)!-$8P0D$T0D(W,# Y1#$V
M,# V,C8R,3<P,#!"#0I3,3$S1C,Q,$$V,#)#1$8R.3,X,39%,#(T0D$V,31"
M-S1#-34T.$8V-C,-"E,Q,3-&,S(P048P,3,U-#A!1$,S,T$T0S(V1C,X,31$
M-D8V138Y-S0Q-0T*4S$Q,T8S,S V1C<R,C U-C8U-S(R,#,Q,D4S,#,Q,D4S
M,#0S,C U,T$W#0I3,3$S1C,T,#<T-C$W,C<T,C T1#1&-$4S,#,X,C V1C9%
M,C U,#0S1$,-"E,Q,#9&,S4P,D4R13)%,D,-"E,Q,3-&.# P,3 Q1D-!,C4P
M,# P,#!%03$R0T)"0S!!,# P,# P.3-"-@T*4S$Q,T8X,3 Q1#9#0S0P,# P
M,# P,#0P,# P,# P,# P,# P,# P,#4W#0I3,3$S1C@R,$9&1D9&1D9&1D9&
M1D9&1D9&,49&1D9&1D9&1D9&1D9&1C(-"E,Q,3-&.#,P1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&1D9$- T*4S$Q,T8X-#!&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&1D,T#0I3,3$S1C@U,$9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9&0C0-"E,Q,3-&.#8P1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1D9!- T*4S$Q,T8X-S!&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D9&1D9&1CDT#0I3,3$S1C@X,# Q,D9!,C8P,#,P,# P-D(P
M,3,R03(V,# S,# P,#=!,C(-"E,Q,3-&.#DP,#$R,T$R-C P,S P,# Q-C Q
M,C9!,C8P,#,P,# P1D1&0PT*4S$Q,T8X03 P,3)#03(V,# S,# P,#,R,#$S
M0D$R-C P,S P,#!%0T,S#0I3,3$S1CA",# Q,SA!,C8P,#,P,# P0C4P,3,U
M03(V,# S,# P,$9&,3<-"E,Q,3-&.$,P1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1D8T- T*4S$Q,T8X1#!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&1C,T#0I3,3$S1CA%,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D9&,C0-"E,Q,3-&.$8P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1D8Q- T*4S$Q,T8Y,# P,# P,#!&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1C P#0I3,3$S1CDQ,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9&1C,-"E,Q,3-&.3(P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D9%,PT*4S$Q,T8Y,S!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&1D0S#0I3,3$S1CDT,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9&0S,-"E,Q,3-&.34P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D9",PT*4S$Q,T8Y-C!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M1D$S#0I3,3$S1CDW,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&
M.3,-"E,Q,3-&.3@P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D8X
M,PT*4S$Q,T8Y.3!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1C<S
M#0I3,3$S1CE!,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&-C,-
M"E,Q,3-&.4(P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D8U,PT*
M4S$Q,T8Y0S!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1C0S#0I3
M,3$S1CE$,$9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&,S,-"E,Q
M,3-&.44P1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D8R,PT*4S$Q
M,T8Y1C!&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1D9&1C$S#0I3,3 V
M.# P,$-#.# T-T4V#0I3,3 V.# P-$-#.# T-T4R#0I3,3 V.# P.$-#.# T
M-T1%#0I3,3 V.# P0T-#.3(V0D$T#0I3,3 V.# Q,$-#.# T-T0V#0I3,3 V
M.# Q-$-#.# T-T0R#0I3,3 V.# Q.$-#.# T-T-%#0I3,3 V.# Q0T-#.# T
M-T-!#0I3,3 V.# R,$-#.# T-T,V#0I3,3 V.# R-$-#.# T-T,R#0I3,3 V
M.# R.$-#.# T-T)%#0I3,3 V.# R0T-#.# T-T)!#0I3,3 V.# S,$-#.# T
M-T(V#0I3,3 V.# S-$-#.#0U-4$P#0I3,3 V.# S.$-#.# T-T%%#0I3,3 V
M.# S0T-#.# T-T%!#0I3,3 V.# T,$-#.# T-T$V#0I3,3$S.# T-$-#.# T
M-S0U,#%"1CDT.$,S1C P0C8P-$$T,$9!03!%,$,-"E,Q,3,X,#4T0C<P-#9%
M,#8P,39%.# P-3-&,#(V149&,#8S1C S-D4Y,0T*4S$Q,S@P-C1&1C W,3 Q
M1C$X,#-!-C R0T0Y-3!!,3DP,T$V,#)#1#$S#0I3,3$S.# W-#DU,$$Q.# S
M038P,D-$.34P03$Y,#-!-C R0T0Y-3!!1D$-"E,Q,3,X,#@T,3@P,T$V,#)#
M1#DU,$$Q.3 S038R.$-$.31#-$$V,CA$0PT*4S$Q,S@P.31#1#DT.41!-C$T
M0T0Y-#E$038P0T-$.30Y1$$V,#9#1$8Y#0I3,3$S.#!!-#DT.41!-C R0T0Y
M-#E$038P,4-$.30Y1$$V,#!#1#DT-#4-"E,Q,3,X,$(T,C=!-C P0T0Y-# W
M038Q-$-$.34P04$V,#%#1#DT,#<T10T*4S$Q,S@P0S1!-C$T0T0Y-3!!038P
M,D-$.30P-T$V,31#1#DU,$$S1C!$#0I3,3$S.#!$-$%&,T9",#-&0D,S1D(Q
M038P,4(W0C)"-T(S,T9"-#-&-C,-"E,Q,3,X,$4T0C4S1D(V,T9"-S-&0C@S
M1D(Y039&1D(W-D9"-T)&0C<P,0T*4S$Q,S@P1C1#,$(W0D$S1D0Q,T9$,C-&
M1#,S1D,S,T9#-#-&0S$S1D0P#0I3,3$S.#$P-$,R0T0X.3=%,T8R-C-&,C=!
M-C T0C<R,$$V-3A"-S(U04(-"E,Q,3,X,3$T.4%#0S@Q-45!-D9&0C="03-&
M0D)"-D)"04(P-4-$.30X, T*4S$Q,S@Q,C0P-T-$.34R,T$Q,#0R-S$P03$P
```

```
M,3(V1C5"-D)"-$-!,4,T#0I3,3$S.#$S-# U,C4P,31&0C="0C(P13)"-D)#
M,C9&0T(V0D(R-S%!,#,-"E,Q,3,X,30T-$$R-S!"-$$R-S!"-$$R-S!"-$$R
M-S!",C!#-D-#.$)&00T*4S$Q,S@Q-30Y-D-#.$-&,T-#.$0X,$-#.$9#,3 Q
M,#$T,D-$.$%".45$#0I3,3$S.#$V-#(V-#0S1D%%0S9&.# P0T0X0CA#0S9&
M.# Q0T0X0CA#-D(-"E,Q,3,X,3<T0S9&.# R0T0X0CA#0S9&.# S0T0X0CA#
M0S9&.# T0T0Q1@T*4S$Q,S@Q.#0X0CA#0S9&.# U0T0X0CA#0S9&.# V0T0X
M0CA#0S9&.$,S#0I3,3$S.#$Y-# W0T0X0CA#0C9!13(W,4)!-C%%0T0Y-# W
M,C P0T$V-#@-"E,Q,3,X,4$T,4%#1#DT,#<R,# U038Q0D-$.30P-T$V,S)#
M1#DU,$%",PT*4S$Q,S@Q0C1#0S@Q,3A#1#@S141#1#@U-D-#1#@W-D)#1#@V
M-4,S1D%!#0I3,3$S.#%#-#@Y,T9#.#-&0S<S1D)!039&1D(W-D8V13 T1#4S
M1D0V1C$-"E,Q,3,X,40T0C9"0S0Q,#$R.$(V0D,Y-T$Q,#0R-C$T0C9$-4$Q
M,#!!-PT*4S$Q,S@Q130R-C!%,T-$-D(V1#9!,3 U,C8P,C-&1#9"1D0U,C P
M.#$V#0I3,3$S.#%&-$)&1#4S1$,W,C=$03-&0S=#1#@R,#0R,$0S0T,X,3$X
M,D0-"E,Q,3,X,C T0C9$-C(W,4$T03(W,$(T03(W,$(T03(W,$(T03(W,$)!
M.0T*4S$Q,S@R,30R,#!#0T,X,CDU0T,X,D-"0T,X,S)"0T,X,SDX038P-#(S
M#0I3,3$S.#(R-$-$.30P-S-&0D4P140Q,$5"-D$S03 V14(W.$)#1#@V1C@-
M"E,Q,3,X,C,T,$-!-C@U0T0X,S@U0C8W,$$P-D5"-SA"0T0X-C!#039!1@T*
M4S$Q,S@R-#0X0T-$.#,X-4(V-D9!,#9%0C<X0D-$.#8P0T$V.3%#1$5$#0I3
M,3$S.#(U-#@S.#4P140S,35#-D8Y,#%#1#@X045!-D,U0T0X,S@U,34-"E,Q
M,3,X,C8T0S9&.3 Q,C<P-4$V,C!#1#DT-S9"-D0R031#,#(V,3 U0@T*4S$Q
M,S@R-S1"-D$V0C<X0D(V03="-SA#0T0X-S(Q039#04-$.#,W-S!##0I3,3$S
M.#(X-$(V-S="-SA"0C8W.$(W.$-#1#@W,C%!-D0R0T0X,S<W-3(-"E,Q,3,X
M,CDT.#%!-C%&0T0Y-# W,T9"13-#0D4S1CDP0C9$,4$T,T9&. T*4S$Q,S@R
M031"-SDQ0T0Y-31"038X1$-$.#,X-4(V1#)!-#-&0C<Y,3$V#0I3,3$S.#)"
M-$-$.34T0D$V0S5#1#@S.#5"-D0S030S1D(W.3%#1#DU0C,-"E,Q,3,X,D,T
M-$)!-D-%0T0X,S@U.#%!-C$U0T0Y-# W,T9"13-#0D4W-PT*4S$Q,S@R1#1"
M-D(R0C<Y,3-&.3!#1#DU-$)!-C@P0T0X,S<W0C9",S$T#0I3,3$S.#)%-$(W
M.3%#1#DU-$)!-C@S0T0X,S<W0C9",4(W.3%#1#DU.3 -"E,Q,3,X,D8T-$)!
M-C@V0T0X,S<W0C9"-$(W.3%#1#DU-$)!-C@Y0T1$1 T*4S$Q,S@S,#0X,S<W
M0C9"-4(W.3%#1#DU-$)!-CA#0T0X,S<W0C9".$$T#0I3,3$S.#,Q-$(W.3%#
M1#DU-$)!-CDP0T0X,S<W0C8X.4(W.3%#1#DU-T$-"E,Q,3,X,S(T-$)!-D,W
M0T0X,S<W.#%!-C$V0T0Y-# W,T9"14(V0S-!0@T*4S$Q,S@S,S1"-SA"0C9#
M-$(W.$-#1#@W,C%!-CA"0T0X,S<W0C9"1C4T#0I3,3$S.#,T-$$Q1D8R-S!#
M03 V14(W.$)#1#@V,$-!-D,V0T0X,S@U-C(-"E,Q,3,X,S4T0C9#,$$Q1D8R
M-S!#03 V14(W.$)#1#@V,$-!-D-#0T1$10T*4S$Q,S@S-C0X,S@U0C9#,4(W
M.$)"-D,R0C<X0T-$.#<R,4$V1#)#1$-&#0I3,3$S.#,W-#@S-S<X,4-$.30Y
M1$(V.$5#1#DT-S9"-CA&0T0Y-#<V-#4-"E,Q,3,X,S@T.#%#1#DT.41"-CA$
M0T0Y-#<V0C8X14-$.30W-D(V.$9%0PT*4S$Q,S@S.31#1#DT-S8X,4$V,C1#
M1#DT,#<S1D)%,T-"14,V1CDX.#!$#0I3,3$S.#-!-#(V-#8P140T,$(U-4-$
M,S4Y,$-$.#E&.$$V.$-!1#(Q,S<-"E,Q,3,X,T(T-35#1C,U.3!#1#@Y1CA!
M-D,U040Q-D(V0T-#,$8Y.$$X0@T*4S$Q,S@S0S1"-SDQ0C9#0D,R1CDX.4(W
M.3!#1#@Y1CA!-D-&040P,44P#0I3,3$S.#-$-#@Q0T0Y-#E$0C8X1$-$.30W
M-D$V,D5#1#DT-S9"-CA%,$0-"E,Q,3,X,T4T0T0Y-#<V0C8X1D-$.30W-C@Q
M0T0Y,3%!0S9&.3 P,C9"- T*4S$Q,S@S1C0T-T$V,3E#1#DT,#<T-3E$-3-#
M1#DQ,T-"-D%&04(P03%%#0I3,3$S.#0P-$(W.3E"-C$V0D4Q.$$T,C R-D8R
M0C9!1D(Q.3DR-D8R0T8-"E,Q,3,X-#$T-#4Y1#4U0T0Y,3-#038P04-$.34P
M030U.40U-T-$.3%$, T*4S$Q,S@T,C0S0S0U.40V,4-$.3$S0S0U.40V14-$
M.3$S0S0U.40W-T4X#0I3,3$S.#0S-$-$.3$S0T$V,3-#1#DT,#<X,4(V0C)!
M,3 R,C8P04(V,#<-"E,Q,3,X-#0T0C%!-# S,C8P-$$V,40R,# W0D5",CA#
M-4%$-CE#,D)#-0T*4S$Q,S@T-30X,3A"0C8R-4(V,C)!0C4P.3="-C(Q03E#
M,T(W,C9"1D4T#0I3,3$S.#0V-#(W,T-!1D$V-3A"-S(U0C8P,4$T-S@T-#0T
M-#0Y-SA#-38-"E,Q,3,X-#<T1#8Y0S%"0C="0S-$0CDR-C<W,T-"-T(V0C=!
M,3!!,C4S,0T*4S$Q,S@T.#0V1C-&0C=!-C5#0C<R-3-#0C9"-D(V03$S0S(U
M-C$S1D$Q#0I3,3$S.#0Y-$(V,T-"-4(V0C5!,3-#,C4U-S-&0C4S0T(X0C9"
M.$$Q-S(-"E,Q,3,X-$$T,3@R-3(P,T9".$(V-D9"-T)&0C8W,$(W0S U-4,S
M,S5%0@T*4S$Q,S@T0C1#,34U0T(S-4,Y-35#1#,U0T9!-D9&0C<V1C-&-S S
M1D8V#0I3,3$S.#1#-$,S,T9#-#-#0C1"-D(T03$Q.#(U,C4S1D(T,T-",T-$
M1#(-"E,Q,3,X-$0T.#0S1$(Q0C,R-#%!038P,4(W0C,S0T(R0C9",D$Q,$,Q
M1 T*4S$Q,S@T130R-3!%038P,4(W0C(S0T(Q0C9",4$Q-C0R-3 R,T9",40Q
M#0I3,3$S.#1&-#-$0D$R-C9%0C9#.$$Q,S$R-#-!03$Q,S(T,T$T.#DW-$$-
M"E,Q,3,X-3 T.$-$-C@U,3(X-T0V.#4Q,S@W.#@X049$,C R03@U-S,Y1 T*
M4S$Q,S@U,30X-3@U.#4X-3@U.#4X-3@U.#4X-3@U.#4X-3@U.#4X-C R#0I3
M,3$S.#4R-#@V-D8X-S<T.#<W1C@W.30X-T-!.#DX1C@U-# Y,#DV1$4-"E,Q
M,3,X-3,T.3!&0C@U-$1!1#$V,C P,C-#0S@X03@P0T0X-44R0T1%,@T*4S$Q
M,S@U-#0X-D4P0T0X-T1!0T0X.44T.#$S0T,W.#$S0S@Y0C8X.31##0I3,3$S
M.#4U-$$Q,T,R-C!",T8X.4-$.#4V0T-$.#8V-$-$.#<V0C-&0T$-"E,Q,3,X
M-38T0S@X,4$V.#!"-S U,C!$,C-&-S4S1C<V,T9#-3@Q,49$.0T*4S$Q,S@U
M-S1$,30U1C@P,$-$.$$Y1D$V-#1#1#A!1C1!-C@V0C<P-40R#0I3,3$S.#4X
M-#@Q.#%!-C@P0C<P-30U1C@P,$-$.$$Y1D$V0D5#1#A!,3$-"E,Q,3,X-3DT
M1C0S1D%%0T0X0C W0C=!,T-$.$(X0T-$.$(P-T-$.$(Y10T*4S$Q,S@U030X
M0T-$.$(P-T-$.$(X0T-$.$(P-T-$.$(X0T-$.$(P-S4R#0I3,3$S.#5"-$-$
M.$(X0T-$.$(P-T-$.$(X0T-$.$(P-T-$.$(X0T-$-T,-"E,Q,3,X-4,T.$(P
M-T-$.$(X0T-$.$(P-T-$.$(X0T(V044R-S V,T,Q1 T*4S$Q,S@U1#1$,3%%
M1#$R,# X0C9!,T%"-D5"-T$S,T-#-3@Q,$5$,3=%#0I3,3$S.#5%-#(V0C8V
M1D$Q1D8R-C X0C9!,T(W-D9"-S<P,C P14(V13 -"E,Q,3,X-48T03-",39&
M,C,P,D(W-D9",3<P,C0P,D(W-S!"-D$S0D)%,PT*4S$Q,S@V,#0W-D(W-S8R
M-# R,T,W-3@Q0C8X0C)!,#$T,$%%13<T,D4T#0I3,3$S.#8Q-#1$,D$P,35#
M.48S1#A",D$P,30P04(R,$(W.3E"-CDY-#(-"E,Q,3,X-C(T,D$P,30P0C<Y
M,3-&.3!#1#DU-$)"-CDY,D$Q,$(V.$4T-@T*4S$Q,S@V,S1!,3(P,C<P-D$V
```

M,D1"-SA$,C P-$$V,D1"-SA%.#%"-D)!#0I3,3$S.#8T-#<U0C<Y,$(V-S9"
M-SDQ0C9#-4(W.3)#1#DU,D-"-CDT-38-"E,Q,3,X-C4T03 V14(W.$)#1#@V
M,$,X,3-&-S$S1C<R,45$,C%#1#)!,PT*4S$Q,S@V-C0S1C<W,T8W.#-&-S,S
M1C<T,T9#-C@Q0C9$,D$T0S R-SDW#0I3,3$S.#8W-#!"0C9$,C!#1#(P,D$T
M,T9!-$)&0C=$,C0U1C@Q,$-$.38-"E,Q,3,X-C@T.$$Y1D-$.$(W0T$V035#
M1#A!1C1!-D1&0T0X048T039$.0T*4S$Q,S@V.30P,4-$.$%&-$-$.$(P-T-$
M.$(P-T(W035#1#A",#="-S4V#0I3,3$S.#9!-$$T0T0X0C W0T0X0C W0T0X
M0C W0T0X0C W0T0X0C W-#,-"E,Q,3,X-D(T0T0X0C W0T0X0C W0T0X0C W
M0T0X0C@Q,C<P.4(V1#(P- T*4S$Q,S@V0S0T0T%!0S!"-T0R,C Q-$(V035"
M,#<R0C=!-T(V031",C0X#0I3,3$S.#9$-#<Q0C=!-D(V035"-S<R0C9!-$(W
M-S$X,4(V1#)!-$,P-3$-"E,Q,3,X-D4T,C8S04(V03="0C<T0C<W-$(V039"
M.3<S0C<W,S-#0S9"-PT*4S$Q,S@V1C1"-D$V0C%#,S(U,3 R,C V0C9!-T(Q
M0S0R,S X0C9!-D5##0I3,3$S.#<P-$(W0S-"-D$W0C=#-$(V039",3<W,C4Q
M,#(R,#9"-D$W1#$-"E,Q,3,X-S$T0C$W.#(S,#A"-D$V0C<W-T(V03="-S<X
M.#$S1CDY0C9$. T*4S$Q,S@W,C0X0C(W,#A!,3 Q,C8Q14$V-T9"-SDY0C8X
M0T%%13DT,C$Q#0I3,3$S.#<S-#4T-#8X-SE&0D(Y.3DW.#8U-#0V,D$P,35#
M0D8Y,3-&-3 -"E,Q,3,X-S0T.3!#1#DU-$(X,4$V,SE"-SA%0C<X1C@Q0C8W
M,T(W.3 P. T*4S$Q,S@W-31"-C<T0C<Y,4(V0S9"-SDR0T0Y-3)#0C8Y,T(W
M.$)"-C!"#0I3,3$S.#<V-#DT0C<X0T-$.#<R,3@Q044P1CA#-D8W.35!,D%&
M0C@Q,#,-"E,Q,3,X-S<T,49$,T$V,T9!1#8Y,C<P,C%%1#,X,3!%1#,Q,4$V
M,#%$, T*4S$Q,S@W.#0S1D$R0T0X.49#0T0X.#$X,C0P,S%%1#,T1D(W03@X
M,49!#0I3,3$S.#<Y-#!%1#,R.3,S03)!-C Q0T0X.49#040W.#(T,#8Q140S
M0CD-"E,Q,3,X-T$T,T9!.#(P,3A"-SDY0D)!.$(W03A!,3 W,C8P14(V.3DV
M-0T*4S$Q,S@W0C0R-S T03$P-S(V,#9"-D$X04(P.$(W03A"-D$X0T)&.#(Q
M#0I3,3$S.#=#-#(X030P1D(W03@X,4$V-T9!1#$U,C<P,C%%1#,P1D0S,#,-
M"E,Q,3,X-T0T,#0S0T0S,45$,S@Q038W.4)"03@Y-SA#-D,P,#@Q0C=#,PT*
M4S$Q,S@W130Y04$V,$9"-SE%-#5&.# X0T0X03E&0T0X0C=#038U-40S#0I3
M,3$S.#=&-$-$.$%&-$$V,#=#1#A!1C1!-C P0T0X048T0C8Y04-$,C -"E,Q
M,3,X.# T.$%&-$-$.$(P-T-$.$(X,3(W,#8S03E%,C8R, T*4S$Q
M,S@X,31$-$$V,#$X,3-&.3E"-CDY-#@T.#0X.3<X0T(V-#!$,39"#0I3,3$S
M.#@R-$8X.# R-C,U0C8T,40Q1C@X,3(V,D5"-C0R1#%&.#@R.34-"E,Q,3,X
M.#,T,C8R-T(V-#-$,48X.#,R-C(P0C8T-$0Q1C@X-#(V,3E$,@T*4S$Q,S@X
M-#1"-C0U1#%&.#@U,C8Q,D(V-#9$,48X.#8R-C!"0C8T-S(V#0I3,3$S.#@U
M-$0Q1C@X-S(V,#1"-CDY.3@X,3-#.3E"-CDY03$P.#(S,T4-"E,Q,3,X.#8T
M0C4Y.3@Q,T8Y.4(V.3DT.#0X-#@Y-SA#0C8T,$4Q-3!%. T*4S$Q,S@X-S0R
M-C)%0C8T,44Q-3$R-C(X0C8T,D4Q-3(R-C(R0C8T,T(Y#0I3,3$S.#@X-$4Q
M-3,R-C%#0C8T-$4Q-30R-C$V0C8T-44Q-34R-C$P.3@-"E,Q,3,X.#DT0C8T
M-D4Q-38R-C!!0C8T-T4Q-3<R-C T0C8Y.3DX.#%!-@T*4S$Q,S@X030S0SDY
M0C8Y.4$Q,#@R,T)$.3DX,4%%,S T,D%".#)"-T8U#0I3,3$S.#A"-#DW.49!
M.3E"0C<Y-D(V03A!13 S-#)"0CDW.3="-CDV-C,-"E,Q,3,X.$,T03DP,#@W
M.$$W13A$-T4X13=%.$8X,3-&.3)!-C!&0C<P- T*4S$Q,S@X1#0Y1$$V,#1"
M-SE!,T8Y.4(V.41"0CE!030P1CDW.$-"-D5##0I3,3$S.#A%-#DY14(W.4(W
M.3DS03E!,D%%14(V.3)",3DY,C(P.$(V1#4-"E,Q,3,X.$8T.3E"-SDR0C8Y
M1$(W.$$S03E$,D%$-C-&.3 S1CDQ039$10T*4S$Q,S@Y,#0P-$(W.41"-CE$
M0D(X03DW.$-%-C<Y0D4Y1#0R0D(Y,3 T#0I3,3$S.#DQ-$(W.3$Y1D(Y.3!"
M-SDP,T$Y1#(V13A"-CDQ044R1#0R.$8-"E,Q,3,X.3(T0C<Y,4(V.3!"1CDP
M044R1#0R0D(Y,$(W.3!#1#DU,D,R-0T*4S$Q,S@Y,S1"-CA!030P1D%%,D0T
M,D)".31"-SDQ.49".3DS0C<Y,#4V#0I3,3$S.#DT-#,T.3 S-CDQ0C8Y,#(W
M,39!,3 Q,C(P-D(V.3%!,38X1C<-"E,Q,3,X.34T,C4P0T(V.3%!,#8X0C<Y
M,4(V.3!!,C Q0C<Y,$-$.35"-0T*4S$Q,S@Y-C0T0C@Q.4)#1#@W-S0Y03E$
M.4)#1#@W-T8Y03E$.4)#1#A##0I3,3$S.#DW-#@W.30Y03E$.4)#1#@W0T$Y
M03@Q040P1C4U0T(S-4,Y148-"E,Q,3,X.3@T,T9$-#-&0T0S1D-%,T9#1C-&
M1# X,4,V1CDX.#(W,#9!,0T*4S$Q,S@Y.30S1D-",T9#0T%$-#DT-48Y.#!#
M1#A!.49#1#A"-T-!-CDV#0I3,3$S.#E!-$$U0T0X048T039$1D-$.$%&-$$V
M,#%#1#A!1C1#1#A"0C4-"E,Q,3,X.4(T,#=#1#A",#="-T-#0T0X0C W0C=#
M0D-$.$(P-T-$.$(R10T*4S$Q,S@Y0S0P-T-$.$(P-T-$.$(P-T-$.$(P-T-$
M.$(P-T-$.$(P-T)$#0I3,3$S.#E$-$-$.$(P-T-$.$(X,3(W,#="-D0T-$-!
M03@P0C=$-#@Q,40-"E,Q,3,X.44T,T9#1#-&0T4P140T,$-"-D-#0C!#04(W
M0T5"-D-"0C)#- T*4S$Q,S@Y1C1#.4(W0T0X,4-$.34T0C@Q0C<Y1D$V,3!"
M-SDX0T0X04,Q#0I3,3$S.$$P-$(Y,C9&0D$V1C!#1#A!1C1"-CE&0C<T,$$V
M,#A"-SDY-3D-"E,Q,3,X03$T0T0X0C%#,S9!,$-$.$(Q0S,V03%"-C0P0T0X
M040V0C=$1@T*4S$Q,SA!,C0T,#-!.3DR-D5"038S.$(W.3E#1#A",4,S.3E!
M0T0X0C1$#0I3,3$S.$$S-#%#,SDY04(V.4%!.# Q,#!!,C Q-#8T-C,V-#<S
M-C0V,44-"E,Q,3,X030T,S8T-3,V-#0S-C0S,S8T,C,V-#%"-C0W-#DT.4-$
M.$%$0@T*4S$Q,SA!-31$-C-!.3DR-D0T,T9!14(V-#!#1#A".$-"-C0Q0T0X
M0C4U#0I3,3$S.$$V-#A#0C8T,D-$.$(X0T(V-#-#1#A".$-"-C0T0T0X0CA#
M1$(-"E,Q,3,X03<T0C8T-4-$.$(X0T(V-#9#1#A".$-"-C0W0T0X0CA#0C8Y
M. T*4S$Q,SA!.#1!13(W,3<S1C0P,T8T,3-&-#(S1C0S,T8T-#-&-#4S1D%!
M#0I3,3$S.$$Y-#0V,T8T-S-!.3@R-S S0T,X03 R.#%"1CDY040Q-D$V-D,-
M"E,Q,3,X04$T-35!1#1$038P.$(W.41"13DY1C8U0T)&.3E!1#0Q,T$T- T*
M4S$Q,SA!0C0Y1#(V1C0X0S@Q,3 P-4%%1D$U038R-C(V,C8R,C9&.3)##0I3
M,3$S.$%#-#$Q,#5!-D9&045$,T(T,#$V,C8R-C(V,C5!,C9&-T$T,$$-"E,Q
M,3,X040T,#$X,3$P,#5!-3 Q,C<P,C$Q,#5!13%%-4$R-D9$,#!#.0T*4S$Q
M,SA!130P,3 P-#9!135!-4$R-D9$,3$P-4%%,30U03(V1D0X,41##0I3,3$S
M.$%&-$%$,D-!1$1%041$0T%$1$%!1$0X041$-D%$1#1!1$0R1C(-"E,Q,3,X
M0C T041$,#@Q039&1D%$0T)!1$,Y041#-T%$0S5!1$,S041#.0T*4S$Q,SA"
M,31#,4%$0D9!1$)$040P-S@Q039&1D%$0C8T.3@Q0C=!1#1"#0I3,3$S.$(R
M-$(X04%"-T%"0C9!.4(W04$S1D$Y038P.$(W04-"-D%"-48-"E,Q,3,X0C,T
M-48T-C(T,#$U0S-!04,R-D8X0D9!0S Q04,P0T$V,#$S. T*4S$Q,SA"-#1"

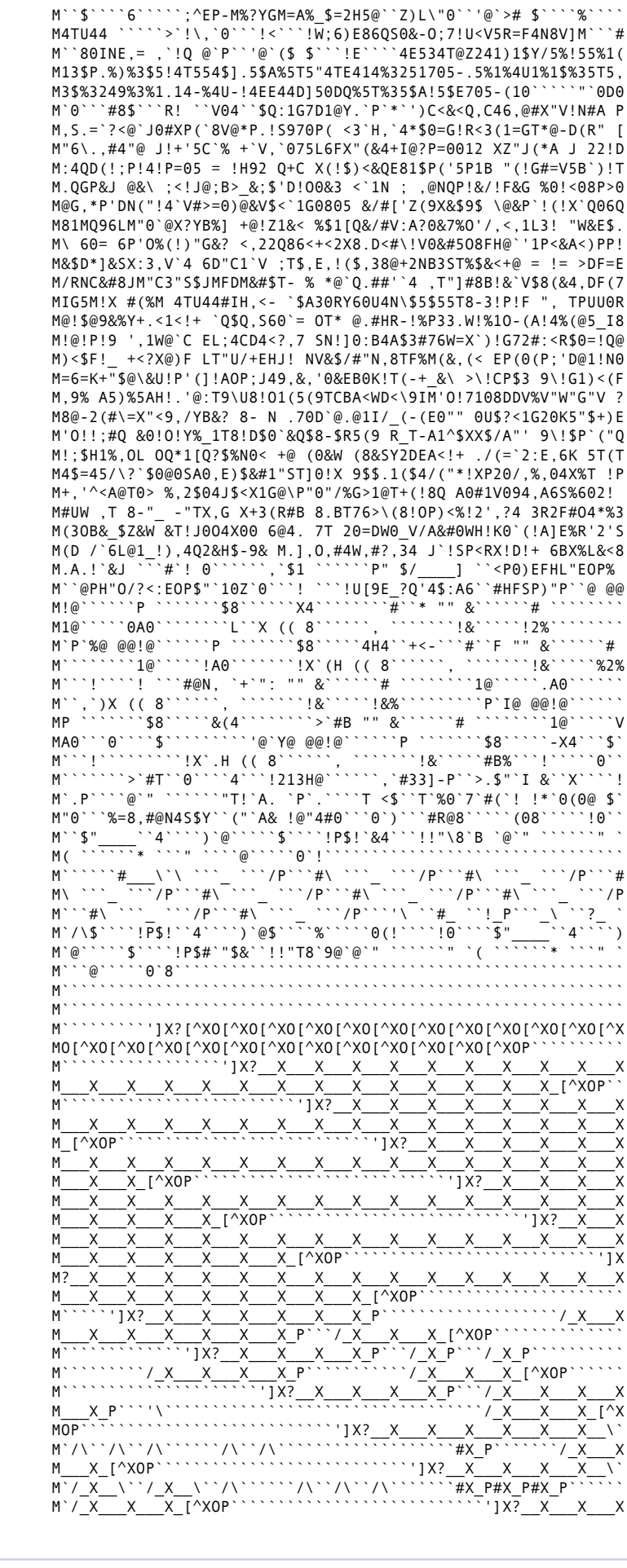
```
M.$%!0C=!04$V0S!".$$Y0C=!.4(V04(U1C0X-3DT.#A!#0I3,3$S.$(U-#4Y
M-#@U.30X-3DT.#4Y-#@U.4(W04-".$%!0C=!03E&-D(-"E,Q,3,X0C8T0CA!
M.4(W03E"-D%#-#@U.4(W04-".$%!0C=!03E&0CA"0PT*4S$Q,SA"-S1!.4(W
M03E"-D%#0C9!1#@Q,T9!03-&03DX,4$V,#%".$5$#0I3,3$S.$(X-$%!,C8P
M-$$V0C!".$$Y.#%".$%%.3<X0T0V.4,U,T(W0T,-"E,Q,3,X0CDT044X,4$V
M,#%"-T)%038Q,D-$.30P-S-&0D0S0T(Y039#0@T*4S$Q,SA"030P14-$.30Y
M1#-&.41"-CE$03$P-3(V,49!-C$T0T0Y-#=##0I3,3$S.$)"-# W038X1D(W
M-3!"-D(X0C<Y,3-&.3!#1#DU-$)"-CA%1C0-"E,Q,3,X0D,T0C<U,4(V.$9"
M-S4R,T8U,T-#.$,S.$$V.#9"-S4P038T0PT*4S$Q,SA"1#0R1D(W-3-"-S4V
M038R,$(W-3E!-C-!0C<U0S-&-49"-C)!#0I3,3$S.$)%-$(R0C<Y,3-&.3!#
M1#DU-$)"-CA%0C<U,4(V.$9"-S4R-D0-"E,Q,3,X0D8T0C9",T(W.3$S1CDP
M0T0Y-31"0C8X14(W-31"-CA&0C=&-0T*4S$Q,SA#,#0U-4(V0C%"-SDQ,T8Y
M,$-$.34T0D(V.$5"-S4W0C8X1C0U#0I3,3$S.$,Q-$(W-3A"-D(T0C<Y,3-&
M.3!#1#DU-$)"-CA%0C<U04(V,#0-"E,Q,3,X0S(T.$9"-S5"0C9"-4(W.3$S
M1CDP0T0Y-31"0C8X14(W-40Q- T*4S$Q,SA#,S1"-CA&0C<U14-$.30V,D)%
M.40X0T0V.4,T1$-$.30Y1#9"#0I3,3$S.$,T-$(V0D-!,49&,C=&04$Q,#0R
M-S$P03$P,#(W,#A!,3 R.4$-"E,Q,3,X0S4T,C<P0D$Q,#,R-S W,T9"1#(P
M139#0SA#1$)!-C Q0C<W-0T*4S$Q,SA#-C0Y.4(V0D0R-S!!03$P0C(U-C4S
M04)$038P-4(W.3E"-D4Q#0I3,3$S.$,W-$)#03$P,S(W,D)"13E$.$-$13E#
M,S<V0T(Q139",4$S-$(-"E,Q,3,X0S@T,#(R-C$Q0T0X-#-$0C<Y.4)%.40X
M0T1%.4,S-T4V0C$Y-@T*4S$Q,SA#.31",3DY,C P,T0Q.4,S1#(S,D-$-CE#
M-#5%-T(Q,C R-40R#0I3,3$S.$-!-$)%.41$13E#,S<X0S9!0C%%-D(Q,D(P
M-40Q.4,T-3(T-D,-"E,Q,3,X0T(T,31$-CE#,T1%-T(Q03,P,C(V,$)#1#@T
M,T1"13E$1$5"- T*4S$Q,SA#0S0Y0S,W.$-%-T(Q,T-"1$$V1D9"-T)#0T,X
M0D%!,T-"1#E!#0I3,3$S.$-$-$$V1D9"-T)#0T,X0S0T0C9"0T$Q,# R-D9!
M,T,Y1$(V,38-"E,Q,3,X0T4T.41!,3 V,C9%-C-&0CE!-C!#0T0Y-#E$0T,X
M,3$X038W.0T*4S$Q,SA#1C0P04-$.30P-T$V,CA#1#DU,$%#-D8Y,#!!-# S
M0C<T,#8S#0I3,3$S.$0P-$,V1CDP,4$T,#%"-S0Q0S9&.3 R030P,4(W-#)"
M-C0P03D-"E,Q,3,X1#$T04(P0D-$.30P-T-$.34R,T$Q,#0R-S%&03$P,C(V
M,$9%-0T*4S$Q,SA$,C1!,3 S,C8P,C(P149"-C0P-$$R03!#038P,C(P,#A"
M-C8T#0I3,3$S.$0S-#0P-$-!,3 S,C8P,31&0C<T,#(P1#-"-C0Q04(Q0T-$
M,3 -"E,Q,3,X1#0T.30P-T-$.34R,T$Q,#0R-S$X03$P,C(V,$)!,3 S,C8W
M.0T*4S$Q,SA$-30P,C(P149"-C0Q-$$R,# S0C8T,31#030P,4(W-#$R,#DV
M#0I3,3$S.$0V-$1!.4(T-48Y,#!#1$8P,#,S1C0S,T8T-#-&-#4S1C0V-T$-
M"E,Q,3,X1#<T,T8T-S0U1CDP,$-$1C P-CE!0T,X,3$X,#$P,3(T0T0W,@T*
M4S$Q,SA$.#0X04(Y,C8R,D$V,$5#1#DT,#=!-C(X0T0Y-3!!038P1C0U#0I3
M,3$S.$0Y-$-$.30P-T-$.34R,T$Q,#$R-S V03$P-#(W,$(R,$8S,C4-"E,Q
M,3,X1$$T0T,X1CE%0T,X,4$S0T,X,4%!.4(T-48X,#!#1$8P,#,T,PT*4S$Q
M,SA$0C0T-48X.#!#1$8P,#,S1D$R038Q,$-$.#E&0S0U1C@P,# X#0I3,3$S
M.$1#-$-$1C P-D$V,3)#1#@Y1D,T-48X,#A#1$8P,#8Y04$V.#8-"E,Q,3,X
M1$0T,41#1#@Y1D,U-30P,S4U,#4U-#(S-34R-34T-#,U-31#,@T*4S$Q,SA$
M130U-30V,S4U-C-#03)!-C%$0T0X.49#-34T,#<U-3 R-D4R#0I3,3$S.$1&
M-#%#-34T,C<U-3(R-C$V-34T,C<U-3(R-C$P-34T,C<U,34-"E,Q,3,X13 T
M-3(R-C!!.4$T-48X,3!#1$8P,#8Y03(P,3)!-C(P0T1#1@T*4S$Q,SA%,30Y
M-# W0T0Y-3(S03$P,3(W.#=!,3 T,C=",C(P1C,T-3 T#0I3,3$S.$4R-# P
M,T8V1C4P-4$R049"038Q,$-$.30P-S-&.41!-C-&1$4-"E,Q,3,X13,T0T0X
M-T4S,T9!,D$V,#%#1#@Y1D-#1#@X-C<R-3 X-$-%- T*4S$Q,SA%-#1",3E$
M,C=%1D-#.$1!1$(V.40T.#0X-#@Y-SA#0C8T,#9##0I3,3$S.$4U-$4W-3!"
M-C0Q13<U,4(V-#)%-S4R0C8T,T4W-3-"-C0T-#8-"E,Q,3,X138T13<U-$(V
M-#5%-S4U0C8T-D4W-39"-C0W13<U-S-#.40S0@T*4S$Q,SA%-S1"-CE$04)#
M04-$.30Y1$(V.41!0C,P0T0Y-#<V0C8Y1$-##0I3,3$S.$4X-$$Q,#@R-S V
M0T,X13,W0T,X1$%$039#-T-$.30Y1$$V-4,-"E,Q,3,X13DT,S)#1#DT-S9!
M-C W0C<Y1#-&03)!-C Q0T0X.49#0T0Q.0T*4S$Q,SA%030X.#8W,C5%,T(Q
M.40R-T8P0C<Y.4(V.40T0T$T,#="-S!$#0I3,3$S.$5"-#E$0C8Y.4(Q.40R
M-D0P04)#0D-$.30Y1$$V,D1#1#DT1#(-"E,Q,3,X14,T-S9"-CE$03$P-S(V
M1#%!-C W0C<Y1$$V0S=#1#DT.41#-@T*4S$Q,SA%1#1!-C,S0T0Y-#<V,T9!
M,D$V,#%#1#@Y1D-#1#@X-C<R-3%&#0I3,3$S.$5%-$$V0C$Y1#(W1C!"-SDY
M0C8Y1#1#030P-T(W.41"-CDY,S(-"E,Q,3,X148T0C$Y1#(V.3-!0D-"0T0Y
M-#E$0C8Y1$%",S%#1#DT-S9%.0T*4S$Q,SA&,#1"-CE$03$P-S(V0T9!-C=&
M0T0X-T4S.4(T-3 P-3!#1#$P#0I3,3$S.$8Q-#A&03$T-48X.#!#1$8P,#8T
M-3 P-3A#1#A&03$T-48X0S(-"E,Q,3,X1C(T.#A#1$8P,#8T-3 P-C!#1#A&
M03$T-48X.3!#1$8P,#9"0PT*4S$Q,SA&,S0T-3 P-CA#1#A&03$T-48X.3A#
M1$8P,#8T-3 P-S!#1#8U#0I3,3$S.$8T-#A&03$T-48X03!#1$8P,#8T-3 P
M-SA#1#A&03$T-48X-3(-"E,Q,3,X1C4T03A#1$8P,#8T-3 P.#!#1#A&03$T
M-48X0C!#1$8P,#8R0PT*4S$Q,SA&-C0T-3 P.#A#1#A&03$T-48X0CA#1$8P
M,#8Y04$V,3%#1#4Y#0I3,3$S.$8W-#DT,#=#1#DU,C-!,3 T,C9&.4-$.#DV
M-D(V03A#,$8X,S,-"E,Q,3,X1C@T,C@T,$(W-# S1C0Q,T8T,C-&-#,S1C0T
M,T8T-3-&-#8V0@T*4S$Q,SA&.30S1C0W.4(T-48X,CA#1$8P,#8Y04-#.#$Q
M.$8V0C<T,#DT#0I3,3$S.$9!-$4V,#%"-S0Q138P,D(W-#)%-C S0C<T,T4V
M,#1"-S0T,S$-"E,Q,3,X1D(T138P-4(W-#5%-C V0C<T-D4V,#="-S0W.#$P
M,3 Q-#@R,PT*4S$Q,SA&0S1#1#A!0CDR-C0V,T9!14,V1C@Q,$-$.$(X0T,V
M1C@Q,4%&#0I3,3$S.$9$-$-$.$(X0T,V1C@Q,D-$.$(X0T,V1C@Q,T-$.$(X
M0T,V-S8-"E,Q,3,X1D4T1C@Q-$-$.$(X0T,V1C@Q-4-$.$(X0T,V1C@Q-D-$
M.$)!-@T*4S$Q,SA&1C0X0T,V1C@Q-T-$.$(X0T(V044R-S$S038R,4-$.30P
M-S4W#0I3,3$S.3 P-$$V,CA#1#DU,$%#0SDP.3-#0S@Q03-#0S@Q04%!-C!&
M.3,-"E,Q,3,Y,#$T0T0Y-# W0T0Y-3(S03$P,3(W14)!,3 T,C<P,C(P1C-#
M-@T*4S$Q,SDP,C0Y0C0U1CDX,$-$1C P,SE!,T9!,D$V,41#1#@Y1D,X0S S
M#0I3,3$S.3 S-$%%,#@U044V-#!$,48X,3 R-C(U-4$R-D8U,T-!,D$V1#4-
M"E,Q,3,Y,#0T,41#1#@Y1D,X0T%%,#@U044V-#!$,48X,3 R-C$P-4$W10T*
```

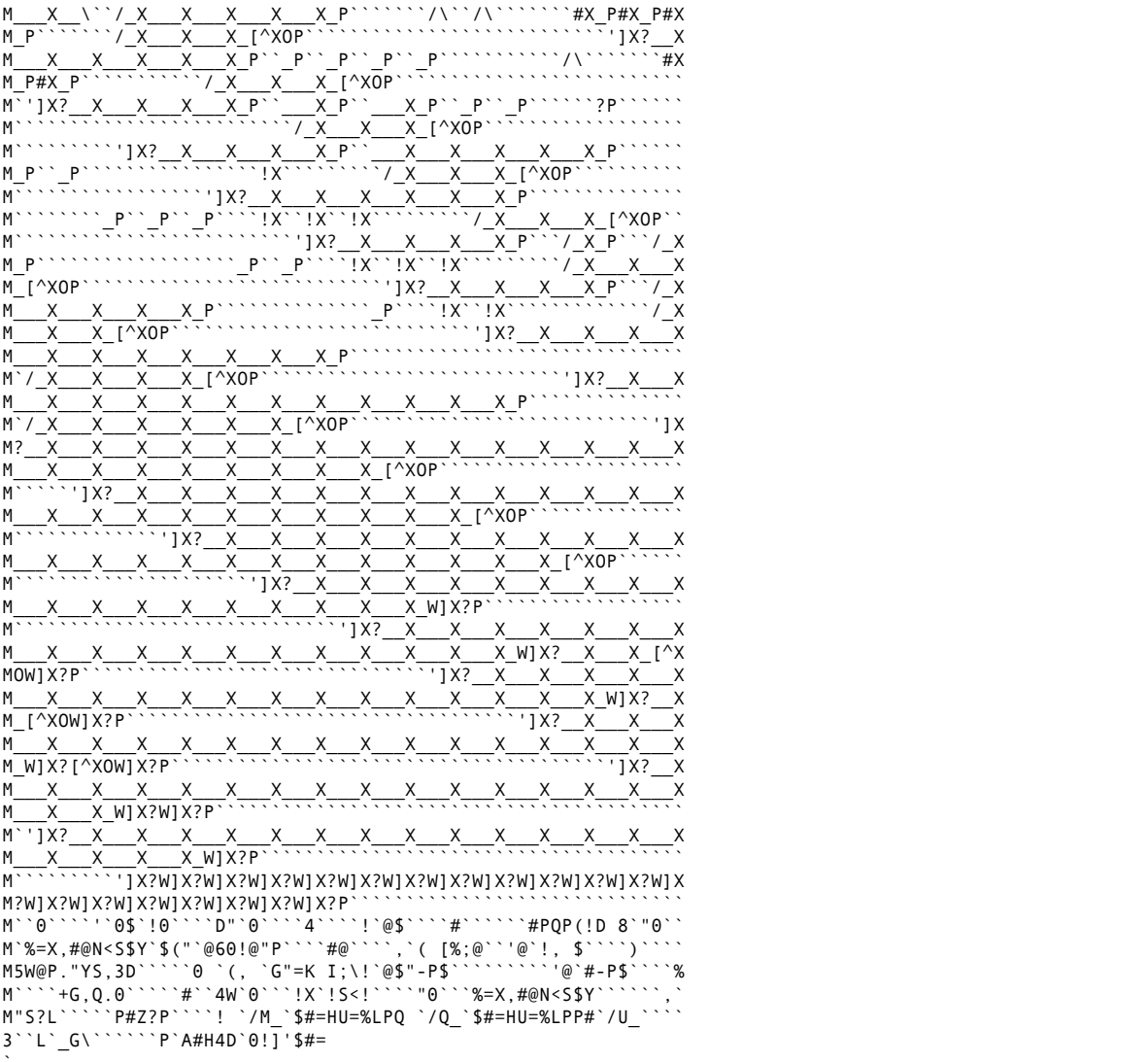
```
M4S$Q,SDP-30R-D8U038R,D-$.30P-T$V,CA#1#DU,$%#0SDP.3,Y0D8Y#0I3
M,3$S.3 V-#0U1CDX,$-$1C P-C-&-#!#1#@Y.4$U-4-",S4T,4$V0T,-"E,Q
M,3,Y,#<T1D9"-S0S0C<T-$(W-#5"-S0V0C<T-S0U1CDX.$-$1C W00T*4S$Q
M,SDP.#0P-CE!0T0X.3=%038R,T-$.30P-T$V,CA#1#DU,$%#0S)$#0I3,3$S
M.3 Y-#@Q,3A#-D8Y,#!!,3 R,C8P,T-#.3(W131$,C8P-D(V.3D-"E,Q,3,Y
M,$$T.#E!,3-",C8U,4$V,#%"-T)%038U1D(W-3!"-D(R0C<Y-0T*4S$Q,SDP
M0C0Y,3-&.3!#1#DU-$)"-CA%0C<U,4(V.$9"-S4R0C9",SDX#0I3,3$S.3!#
M-$(W.3$S1CDP0T0Y-31"0C8X14(W-3-"-CA&0C<U-$(V.# -"E,Q,3,Y,$0T
M0C1"-SDQ,T8Y,$-$.34T0D(V.$5"-S4U0C8X1D(W-38V10T*4S$Q,SDP131"
M-D(U0C<Y,3-&.3!#1#DU-$)"-CA%0C<U-T(V.$9"-T9"#0I3,3$S.3!&-#4X
M,T8U.4-$.3(V-3@Q0S9&.3 P03$P,C(V,#-#0SDS-#D-"E,Q,3,Y,3 T,C(T
M1#(V,$)"-C@Y03$S0C(V,$)#1#DQ-$4R,# S0T1#1@T*4S$Q,SDQ,30Y,40P
M0T0Y,C8U.#%!-C0P0C<Q,T$V,$-"-S$T038P,$-%#0I3,3$S.3$R-$(W,35#
M-D8Y,# R-S!#03$P,3(W,#1!-C,T,C P-D$V,#8-"E,Q,3,Y,3,T,S(R,# R
M038S,T(W,3DX,48V,C<P.4(W,3@P1#$V1D0Y- T*4S$Q,SDQ-#1!1C Q,C!&
M-$$V,#5#1#DU,$$X,4$V,#%"-T)%038V,SDV#0I3,3$S.3$U-$(W-3!#1#@X
M0T9"-CA$0C<U,4(V.$5"-S4R0C8X1D(W-#@-"E,Q,3,Y,38T-3-!-C<S0C<U
M-$-$.#<U,$$V,S!"-S4U0C8X14(W-39!.0T*4S$Q,SDQ-S1"-CA&0C<U-T$V
M-C="-S4X0C8W-T(W.$)"-C<X0C<X0SDX#0I3,3$S.3$X-$-$.#<R,4$V,S!"
M-S4Y0C8X14(W-4%"-CA&0C<U0D$V,D$-"E,Q,3,Y,3DT-S1"-S5#0T0X-C0S
M0C8X1$(W-41"-CA%0C<U14(V.$9"-0T*4S$Q,SDQ031"-S5&038W,$(W-C U
M-4-$,S4Y,$-$.#E&.$(V.$1"-S0U#0I3,3$S.3%"-#8Q0C8X14(W-C)"-CA&
M0C<V,T$V-C5"-S8T038S,4(W1#8-"E,Q,3,Y,4,T-C5!-C<W0C<V-D$V,$1"
M-S8W,T8V.#@Q038P,4(W0D5%,PT*4S$Q,SDQ1#1!-C8S0C<U,$-$.3(U0S!%
M1#,P-4$V,#)#1#@X045"-C<U#0I3,3$S.3%%-#A$0C<U,4(V.$5"-S4R0C8X
M1D(W-3-!-C<S0C<U-$-$-34-"E,Q,3,Y,48T.3(U0T(V1#)!-$,P,C8P0D(V
M039"-SA"0C9!-T(W.$,Q10T*4S$Q,SDR,#1#1#@W,C%"-CA$0C<U-4(V.$5"
M-S4V0C8X1D(W-3=!-C0X#0I3,3$S.3(Q-#<T0C<U.$-$.3(U0S!%1#$P.4(V
M03-!,#9%0C<X0D-$04$-"E,Q,3,Y,C(T.#8P0T(V.$1"-S4Y0C8X14(W-4%"
M-CA&0C<U0D$V-S X1@T*4S$Q,SDR,S1"-S5#-35#1#,U.3!#1#@Y1CA"-CA$
M0C<U1$(V.$5"-SA##0I3,3$S.3(T-#5%0C8X1D(W-49!-C8U0C<V,$$V,S%"
M-S8Q038W-T(W-S@-"E,Q,3,Y,C4T-C)!-C!$0C<V,S-&-C0X,4$V,D1"-SA$
M0C<X14(W.$8Q,0T*4S$Q,SDR-C0X,39%-3!$-S%#,30X,3A".$-"13$V0D5$
M-T8V,C8P-#A&#0I3,3$S.3(W-#%$,30R,# T-T4Q.$)&1#<X03@P038R,4(W
M-3!"-S4Q.#4-"E,Q,3,Y,C@T038R1#A#044Q,T4W-3(U03)!1D)"-D0R031#
M,#(V,CE#,PT*4S$Q,SDR.31"-D$V0C<Y,$(V03="-SDQ039$0D(W.3)#1#DS
M03$S.#="#0I3,3$S.3)!-#DT,SDY,S,Y.34S.#DT,SDY,S,Y.35"-CDS0C<Y
M-$(V1#@-"E,Q,3,Y,D(T.35"-SDS-#4P,#4R0T0Y,T(Y,$5$,S$S038S,$(W
M-38T, T*4S$Q,SDR0S1"-S4W0C<U.4(V03A!-#!&.3<X0T0V.3-&-T(W-3@P
M14,W#0I3,3$S.3)$-$0Q,D1"-D$S03 V13)!,#$T,$%%,#DT,D)&.3-"-SDT
M,C -"E,Q,3,Y,D4T0C9!,T$P-D4R03 W,S Y-#1&0C(Y,T(W.3-"-CDT04(T
M-PT*4S$Q,SDR1C0T,$(W.31"-CDS03DP,4(W.3,T-3 P-4%#1#DS0CE#-C(P
M#0I3,3$S.3,P-$8Y.#@R-C$T0C9#0T,P1CDX04(W.31"-D-"0S)&.3@Y0S4-
M"E,Q,3,Y,S$T0C<Y,S0U,# U14-$.3-".3-&-C)#1#DR-C4X,4$V,D0X-@T*
M4S$Q,SDS,C0X0T%%,4)%-S4P-4$R049",T8Y,S-&.30V13 Q.35"-D-"#0I3
M,3$S.3,S-#DU0C%",C(W,3$Y-SA#1#8Y0S)"0D(Y-$(W.30S0SDU0T$-"E,Q
M,3,Y,S0T,C1%1#-#.3,R,$4Y0C9",4$T,#,R-C!#0C9",D$Q,#-%, T*4S$Q
M,SDS-30R-3 V,T,Y-#(T,#(S0SDS0C9",T)".31"-SDT,C0P,D5##0I3,3$S
M.3,V-#-#.3,T-3 P-C!#1#DS0CE"-D(T044S0S0R0D8Y,T)"0S4-"E,Q,3,Y
M,S<T0C5"-SDT,C0P,C-#.3,T-3 P-C1#1#DS0CE#-D8Y.#A%-PT*4S$Q,SDS
M.#0R-C!$,$5$-#!!-35#1#,U.3,T-3 P-CA#1#DS0CE!-C8P#0I3,3$S.3,Y
M-#!$0C<V0T$V,$%"-S9$,T8V14-$.3(V-3@Q0C8Y,D)%0SD-"E,Q,3,Y,T$T
M.3$T,D(W.31"1CDS0C8Y,D)%.3 T,D)".3-"-SDS.48S-@T*4S$Q,SDS0C1!
M.3 P0C<Y-3@Q.#DX0D(V.3,V,D$T,$8X0SDW1#8Y,S,Q#0I3,3$S.3-#-$8W
M.$$X.$8W.#DX0D(V.3-!-#!&.$,Y-T0V.3-&-SA!-S@-"E,Q,3,Y,T0T.#A%
M-S Q.#DX0D(V.30V,D$T,$8X0SDW1#8Y,T8W.$$Y-0T*4S$Q,SDS130X.$4W
M,#(X.3A"0C8Y-$$T,$8X0SDW1#8Y,T8W.$$X.#5%#0I3,3$S.3-&-$4W,#,X
M,3,P,S$S,C,S,S0S-3,V,S<S.#,Y-#$T,C0S,C<-"E,Q,3,Y-# T-#0T-30V
M044R.#0R04(Y,D(W.3<Y1D$Y.35"-SDV038Q,@T*4S$Q,SDT,30P,4-$.30Y
M1$$V.#!#1#DT.41!1#,Q039#,$-$.30Y1$1&#0I3,3$S.30R-$%$,D$X,4%%
M,#DT,D%",3)"-SDW.49!.3E#0C<Y-C4U-3(-"E,Q,3,Y-#,T.39&-D%&,#$S
M-3DV0T0Y-#E$038P.$(W.40U-3DV1C8S0PT*4S$Q,SDT-#1!1C Q,S4Y-D-$
M.30W-C-!.40R-D8R.#%!-C$T0C<Y.#0Y#0I3,3$S.30U-#4U.39&-D%&,#$S
M-3DV040Q.3-!.3@R-D8S.#%"-C4P-S -"E,Q,3,Y-#8T040S-S0U,# U,48V
M,C<P.4)&.4%!1# V0D4Y035#,C W- T*4S$Q,SDT-S1&-#@Q040V-3DW0C8P
M-$%!1D5"-S T.49!-$8P04$P,D-!#0I3,3$S.30X-$(W,# Y1#$V,# V,C8R
M,3<P,#E&-C)!-$8P04$P,D(W.3<-"E,Q,3,Y-#DT,# Y1#$V,# V,C8R,3<P
M,#@Q040S13DW0C8P-$%!1D5$,0T*4S$Q,SDT031"-S T.49!-$8P04$P,$(W
M,# Y1#$V,# V,C8R,3<P,$0W#0I3,3$S.31"-#E&-C)!-$8P04$P,$(W,# Y
M1#$V,# V,C8R,3<P,#@Q.48-"E,Q,3,Y-$,T.3="-C T04%&14(W,#1!-$8P
M04$P,$(W,# Q-C P-C(W,PT*4S$Q,SDT1#0V,C$W,#!!-C U0T0Y-3$U.#%"
M-SDY,T8Y0D(V,#1!-$4P#0I3,3$S.31%-#!&04$P14(W,#1!-C T0C<P,#$V
M,# V,C8R0C8P,#$W14$-"E,Q,3,Y-$8T,# Q-C P-C(V,C$W,#!!-#@P,C9%
M,$(V.4(R-C T,T,Y,@T*4S$Q,SDU,#0Y0C(P1$%"-CDY.#%"-SE#038V-$%$
M,#4S03E#,C9&.$5"#0I3,3$S.34Q-#@Q-48X0T%&,#$V-3 S13@R-D8Y-$$R
M-D8T.$,X,4(V.3$-"E,Q,3,Y-3(T0D,R-D9#0C9"0S(W1D,X,4$V,3!"-SDY
M-$8S.#DQ,SE%. T*4S$Q,SDU,S0Y,#0Y0C$Y,C(U,#)",#DR,SDY-#,Y.3,S
M03DY,C9%1#%&#0I3,3$S.34T-#,S.3,S,SDT0C<Y-3@Q038S,$(W.$1"-SA%
M0C<X1D(V-44-"E,Q,3,Y-34T.3 R-C V0C8Y,4$Q-C0R-3!%0C8Y,4$P-C1"
```

M-SDQ,C0Q,0T*4S$Q,SDU-C0P,C-!.3 S0SA$,C!%.$$Q,$$R-3 V03 P03-#
M.$4R,$5##0I3,3$S.34W-$8V04(S,$(W.$8S1$)%,C8Q-$(V.$1!,3,P,C8P
M14$V03D-"E,Q,3,Y-3@T,C!"-SA$0C8X14$Q,S R-C T038R,$(W.$4X,3(P
M,C V- T*4S$Q,SDU.30U-S8Y-D,V0S(P-C$V138T,C U,C<U-S,W,S(W-S,R
M,#4Q#0I3,3$S.35!-#(P,C R,#(P-#$U,#4R-3,R,#4W-S@R,#4S-S0V,3<T
M-3(-"E,Q,3,Y-4(T-CDV1C9%,C R,#(P,C R.#8S,CDR,#0S-D8W,#<Y-S)&
M0PT*4S$Q,SDU0S0V.38W-C@W-#(P,S(S,#,P,S R,#(P,C T,S1$-#DR,$%#
M#0I3,3$S.35$-#4P-S(V1C8T-S4V,S<T-CDV1C9%-S,R13(P,C R,#(P,T(-
M"E,Q,3,Y-44T,C R,#0Y-D4R,#9$-C4V1#9&-S(W.3(P-D8V-C-!,C W- T*
M4S$Q,SDU1C0R,#(P-#0W,C)%,C T1#9&-S(V-S8Q-D4R,#,Q,SDS,D9&#0I3
M,3$S.38P-#,S,D0S,3,Y,SDS.30U-S(W,C9&-S(R,#<R-C4V,38T-3 -"E,Q
M,3,Y-C$T-CDV138W,C S,3)$-S<V.3<R-C4V-#8Q-S0V,3(Q,C!&- T*4S$Q
M,SDV,C0R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P-30V-4(Y#0I3,3$S
M.38S-#9$-S R,#)$,D0R1# P-#8R,#1#,D0R1#)$,C T.#)$1# -"E,Q,3,Y
M-C0T,D0R1#4W-CDV138T,C R1#)$,D0P,#(P,D0R1#1$-3 V. T*4S$Q,SDV
M-30T.#(P-#<R,#)$,D0T-#8Y-S,W,#9#-C$W.3(P-#,W-3)"#0I3,3$S.38V
M-#<R-S(V-39%-S0R,#0T-C$W-#8Q,C R,#(P,C R,#(P-D0-"E,Q,3,Y-C<T
M,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#4S-C4V00T*4S$Q,SDV.#0W
M-#(P-4$W-39#-S4R,#0T-C$W-#8U,D8U-#8Y-D0V-3,R#0I3,3$S.38Y-#(P
M,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P0S(-"E,Q,3,Y-D$T,C R
M,#(P,C R,#(P-34T,34R-30R1C0T-CDW,S<P-D,X0@T*4S$Q,SDV0C0V,3<Y
M,C V1C<P-S0V.39&-D4W,S(P,C R,#(P,C R,$1##0I3,3$S.39#-#(P,C R
M,#(P,C R,#(P,C R,#(P,C U-S8Y,3(-"E,Q,3,Y-D0T-D4V-#(P
M-C$V138T,C U-#8U-D0W,#8U-S(V,3<T-S4X-@T*4S$Q,SDV130W,C8U-3,V
M-39%-S,V1C<R,C U,S8U-S0W-3<P,C R,$(P#0I3,3$S.39&-#(P,C R,#(P
M,C R,#4R-C$V.39%,C T-S<U-C$V-S8U,$8-"E,Q,3,Y-S T,C U,S8U-S0W
M-3<P,C R,#(P,C R,#(P,C R,#(P,C!%, T*4S$Q,SDW,30R,#(P,C R,#(P
M,C R,#(P,C R,#(P,C R,#(P-#8V1D-##0I3,3$S.3<R-#<R,C W,S8U-D,V
M-38S-S0V.39&-D4W,S-!,C R,#(P0T,-"E,Q,3,Y-S,T,C R,#4U,D8T-#-$
M-C,V.#8Q-D4V-S8U,D,R,#<S-C4U,@T*4S$Q,SDW-#0V0S-$-D4V-3<X-S0U
M,S8U-D,V-38S-S0R,#0Y-D4W-$9%#0I3,3$S.3<U-#8U-S(V-C8Q-C,V-3-!
M,C R,#(P,S4R1#9$-CDV13(P,T(-"E,Q,3,Y-S8T-C$W-C8U-S(V,38W-C4V
M-#(P,C@U-#1%-#,R.34S-C5!- T*4S$Q,SDW-S0V0S8U-C,W-#(P-#DV13<T
M-C4W,C8V-C$V,S8U,T$R,#)%#0I3,3$S.3<X-#(P,C S-3)$-S,V-38S,C V
M0S8Y-S8V-3(P,C@T,S9&,D$-"E,Q,3,Y-SDT-D0W,#<U-S0V-3<R-3,V-39#
M-C4V,S<T,C T.39%-S0W.0T*4S$Q,SDW030V-3<R-C8V,38S-C4S03(P,C R
M,#,U,D0W,S8U-C,R,$8T#0I3,3$S.3="-#9#-CDW-C8U,C R.#4P-C4V-3<T
M,CDR,#(P,C U-S0Q1D$-"E,Q,3,Y-T,T-3(T130Y-$4T-S(Q,C T1#<U-S,W
M-#(P-C@V,3<V-C4V-0T*4S$Q,SDW1#0R,#(P-S,V-39%-S,V1C<R,C V,38S
M-C,V-3<S-S,R,$8U#0I3,3$S.3=%-#(X-S<V,38Y-S0R.31&-$(R,#<T-D8R
M,#0S-D8V13<T,4$-"E,Q,3,Y-T8T-CDV13<U-C4S1C(P,C R,#(P,C U,S8U
M-D,V-38S-S0W,0T*4S$Q,SDX,#0S1#8W-D8R0S(P-$0V-39%-S4S1#8U-S@V
M.3<T-3(V1D$T#0I3,3$S.3@Q-#<T-C$W-#8U,C T,S9#-D8V,S9"-S<V.3<S
M-C4R,#(P.$4-"E,Q,3,Y.#(T,C R,#<S-D,V1C<W-D,W.3(P,S$R1C,S,C R
M1#)$,D1%0PT*4S$Q,SDX,S0R1#)$,D0R1#)$,C U,#9&-CDV13<T,C W-#9&
M,C U-#E%#0I3,3$S.3@T-#<R-S4V-3(P-$4V1C<R-S0V.#(P-S0V.#8U-D4R
M,#<P,T$-"E,Q,3,Y.#4T-S(V-3<S-S,R,#4S-C4V0S8U-C,W-#(P,C R,#4S
M-C5!0@T*4S$Q,SDX-C0W-#-!,C R,#<X-S@R1C<X-S@R1C<X-S@R,#<X-S@S
M03A!#0I3,3$S.3@W-#<X-S@R.#<S-C4V0S8U-C,W-#-$-D4V-3<X-S0R.3(P
M,#,-"E,Q,3,Y.#@T,C R,#(P,C R,#(P-$8V138U,C V1#9&-D0V-39%-S0S
M10T*4S$Q,SDX.30R,#<P-D,V-38Q-S,V-3)%,D4R13(X-38V-3<R-S,V.39"
M#0I3,3$S.3A!-#9&-D4R,#,Q,D4S,#,X,D4S,#0S,CDR,#(P,C U,S8U,$$-
M"E,Q,3,Y.$(T-S0R,#1#-D8V,S8Q-D,R,#8X-D8W-3<R,C W.#<X,C Q,PT*
M4S$Q,SDX0S0R,#(P,C@U,S8U-D,V-38S-S0S1#8T-D8V138U,CDR,#E##0I3
M,3$S.3A$-#(P,C R,#(P,C R,#9$-D0R1C8T-C0R1C<Y-SDR,#8X-#8-"E,Q
M,3,Y.$4T-C@S039$-D0U03(P-C@V.#1#,C U,S8Q-D0W,#9#-C5$0PT*4S$Q
M,SDX1C0R,#<X-S@R1C,V,S R,#(P,C R,#(P,C R,#(P-30V1D8X#0I3,3$S
M.3DP-#8T-C$W.3(P-#<W-3<S-S0R,#<X-S@T1#4P-#@R,#(P,3D-"E,Q,3,Y
M.3$T,C R,#4Y-C4W,S<T,C T.#)$,D0R1# P,C T0S)$,D1!-0T*4S$Q,SDY
M,C0R1# P,C T-S<X-S@U,S8U-D,V-38S-S0R,#4U-D4V.49&#0I3,3$S.3DS
M-#<T-S,S03(P,C R,#(P,C R,#(P-#4V138W-D,V.3<S0D,-"E,Q,3,Y.30T
M-C@R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#4S-C4T1@T*4S$Q,SDY-30V
M0S8U-C,W-#(P-34V138Y-S0W,S-!,C R,#(P,C R,#1!#0I3,3$S.3DV-#(P
M,C T1#8U-S0W,C8Y-C,R,#(P,C R,#(P,C R,#(P-$(-"E,Q,3,Y.3<T,C R
M,#(P,C R,#(P-3,V-3<T-S0V.39%-C<R,#<U-S S0PT*4S$Q,SDY.#0R,#4T
M-$4T,S)%,D4R13(P,C R,#(P,C R,#(P,C R,#(P#0I3,3$S.3DY-#(P,C R
M,#(P,C R,#(P,C R,#(P,C R,#(P,C S,3)03-"E,Q,3,Y.4$T-3<V.3<R
M-C4R,#0R-S4W,S(P-#4W,C<R-D8W,C(Q,C V,PT*4S$Q,SDY0C0R,#(P-#(W
M-3<S,C W,S8X-D8W,C<T-C4V-#(P-S0V1C$Y#0I3,3$S.3E#-#(P-#<T130T
M,C R,#,Q,D0U-S8Y-S(V-3(P-#(W-3<S,3<-"E,Q,3,Y.40T,C T-3<R-S(V
M1C<R,C$R,#(P,C T139&,C T-#8U-S9$. T*4S$Q,SDY130V.38S-C4W,S(P
M-S(V-3<S-S V1C9%-C0R13(P-3<V.4$R#0I3,3$S.3E&-#9%-C0R,#0T-CDW
M,C8U-C,W-#8Y-D8V13(P-S0V-3<X-4(-"E,Q,3,Y03 T-S0S031%-S4V1#8U
M-S(V.38S,C V-#8U-C<W,C8U-C4T,0T*4S$Q,SE!,30W,S(P,C R,#(P,C U
M-S8Y-D4V-#(P-#0V.3<R-C4V,SDR#0I3,3$S.4$R-#<T-CDV1C9%,C W-#8U
M-S@W-#-!-#,V1C9$-S V,3<S1C(-"E,Q,3,Y03,T-S,R,#(X-#4R0S(P-$4R
M0S(P-C4W-#8S,D4R.31%-D9%. T*4S$Q,SE!-#0R,#0Y-#0W,S(P-S W,C9&
M-C<W,C8Q-D0V1#8U-C0R13<R#0I3,3$S.4$U-#(P,C U,#9#-C4V,3<S-C4R
M,#<R-S4V13(P-3,T-34T13,-"E,Q,3,Y038T-34U,#)%,C R,#(P-#0T-30R

```
M-34T-S-!,C U-#8U-D1$- T*4S$Q,SE!-S0W,#-!,C W.#<X-S@R,#(P,C R
M,#<W-S,W,#8T,C W.$0V#0I3,3$S.4$X-#<X-S@R,#<W-C0V.3<R,C W.#<X
M-S@R,#(P,C U-39%-40-"E,Q,3,Y03DT-S V0S<U-C<R,#<R-C$V.39%,C V
M-S<U-C$V-S8U,D5%-0T*4S$Q,SE!030R,#(P-3,V-39#,T0V-S9&,D,R,#1$
M-C4V13<U,T0V-4(T#0I3,3$S.4%"-#<X-CDW-#)%,C R,#4P-D,V-38Q-S,V
M-3(P-S,V-3<T,34-"E,Q,3,Y04,T-S4W,#(P-S<V.39%-C0R1C(P,C W-#8U
M-D0W,#8U-S)$0@T*4S$Q,SE!1#0V,3<T-S4W,C8U,C V-C8Y-S(W,S<T,D4R
M,#(P-$4V1D5!#0I3,3$S.4%%-#(P-S(V,38Y-D4R,#<S-C4V13<S-D8W,C(P
M,C R,#(P-D$-"E,Q,3,Y048T,C R,#8V-D8W-39%-C0R,3(P,C R,#(P,C R
M,#(P,C!%,0T*4S$Q,SE",#0R,#(P,C R,#(P,C U,C8Q-CDV13(P-S,V-39%
M-S,V1D)"#0I3,3$S.4(Q-#<R,C T.30T,C V-C9&-S4V138T-#,W-39$-S4V
M0S8Q-T(-"E,Q,3,Y0C(T-S0V.3<V-C4R,#4R-C4V-C(P-3(V-3<S-C4W-#4R
M-C$V,@T*4S$Q,SE",S0V.39%,T$R,#4T-D8V-#8Q-SDR,#)$,D4R1#)$,C(R
M,$0T#0I3,3$S.4(T-#(P,C U.38U-S,W-#(P,D0R13)$,D0R,C(P-#,W-39$
M14,-"E,Q,3,Y0C4T,C R1#)%,D0R1#(R,C R,#(P,C R,#(P,C R,#(P,C!#
M-@T*4S$Q,SE"-C0R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,$5$
M#0I3,3$S.4(W-#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P1$0-
M"E,Q,3,Y0C@T,S R,#,R,S,R,#,T,S4R,#,V,S@R,#,Y,S S,3,Q,S-%,PT*
M4S$Q,SE".30S,3,S,S4S,3,U,S@S,3,X,S S,C,P,S,S,C,R,S4S,CA$#0I3
M,3$S.4)!-#,T,S@S,C,W,S S,C,Y,S,S,S,Q,S4S,S,S,S@R,#(P.3,-"E,Q
M,3,Y0D(T-$4T131%-#4R,#1%-#4T-31%-#4R,#(P-#4T-34S-#4X,0T*4S$Q
M,SE"0S0R,#4S-#4U,S4S-#4R,#(P-3,U,S4S-3<R,#4S-3<U,S-$#0I3,3$S
M.4)$-#4S-3<R,#(P-3<U-S1%-3<R,#1%-3<T131%-3<S,#,P,C@-"E,Q,3,Y
M0D4T,S S,#,R,S,S,#,T,S4S,#,V,S@S,#,Y,S S,3,Q,S,T,PT*4S$Q,SE"
M1C0S,3,S,S4S,3,U,S@S,3,X,S S,C,P,S,S,C,R,S4S,C)$#0I3,3$S.4,P
M-#,T,S@S,C,W,S S,C,Y,S,S,S,Q,S4S,S,S,S@T,#!#,C8-"E,Q,3,Y0S$T
M,3(Q,C!#,# P,# P,# P,# P,# P,# P,# Q,# P0@T*4S$Q,SE#,C0P
M,# P,#0P,# S,#(P,#%&,4,Q1C%%,48Q13%&,48Q13$R#0I3,3$S.4,S-#%&
M,44Q1C Q,#(P,# S,#0P-S8S,$,Q1C$W,T(P,# P0T8-"E,Q,3,Y0S0T,3<P
M,# Q,#$P,# P,# P,# P.#<X03A$.3 Y,SDP,#!!,@T*4S$Q,SE#-30U14)#
M13(V,3-&1$0X,T,R.4,W13(P03-&1#%&-#$Y1#8W#0I3,3$S.4,V-$,S,C$W
M1D9#03(T,#%%-48P,44S0D0S138P.#)$0S(S-D4-"E,Q,3,Y0S<T-T0Y1D,Q
M-#(Q0T9%03!%,4)&-40P,S@P1$4S0S8R0D4T.0T*4S$Q,SE#.#1%,# R-4-$
M1C@Q-C,S1#=#,C)#,#E%,40T,T$Q1D8T-C1##0I3,3$S.4,Y-#$X1D%!-#(W
M-SDY0D,U.#1$03,X-C9%-4)"-3DP-T1",D8-"E,Q,3,Y0T$T.#4V-S,Y0D%%
M-# V-3@Q.30W035&0C<X,C9#-#E!-C4R00T*4S$Q,SE#0C0S0D0Y.#<P-#5!
M0CA%-D$W1CDQ0C0U0S8Y.#=!,C1&.#$Q#0I3,3$S.4-#-$$V-#0Q03DY0S<R
M-3=",T$V-#@V1#@U0C U13=".3A#,# -"E,Q,3,Y0T0T1#(S,#9%141",S4Q
M,$8T13$P1C)!0S)&-S$Y,T-$,3%&1@T*4S$Q,SE#130T1D%$1C,W,#)%0T,Y
M,D0S.$0V1C,Q0C)%0S!%-3!!1D0V#0I3,3$S.4-&-$8Q,3,T1$-%.3 W,C)#
M-D0S,T0Q.$8P0S4R0C!%13,R13$-"E,Q,3,Y1# T-D,X140P-3,P1$5&0C%&
M,$%%-$,Q,CDQ0T8R1#<S0T%"0@T*4S$Q,SE$,30Y-#<V,CA!0D8U,3<T.3 X
M-39"-$5!-CDS-T0U.$(U-T(V#0I3,3$S.40R-# Y14)"-3,V-C@X040T.35#
M0C(Y-S=&-$%!-#@Q-D4Y03$-"E,Q,3,Y1#,T0C<U-3!".#A$-C,T-D$R0C<U
M.3=#.31!,31&-D$X-S0Y. T*4S$Q,SE$-#0R04,X.38Q-31"03E&-T(V13@P
M034T1#<X.39",S4P1#=!#0I3,3$S.40U-# P,#,P,#8U-C,V.#9&,C V1C8V
M-C8P1# P-D0V1C9%03<-"E,Q,3,Y1#8T-CDW-#9&-S(R,#9&-C8V-C!$,# V
M,S9&-D4W-C8U-S(S. T*4S$Q,SE$-S0W,S!$,# U-S<X,C U,S<T-C$W,C<T
M,C R.#,Q,D4S,#@W#0I3,3!$.40X-#,X,D4S,#0S,CDR13)%,D4P1# P,S@-
-"E,Y,#,P,# P1D,-"@I3
`
end

begin 600 WINMAIL.DAT
M>)\^(A$$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`S (```(````-`````P``, ,````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# ```! #`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````(!$CH!````40`````````"!*Q^D
MOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S="!'<F]U
M< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````L`0#H!`````@'V#P$`
M```$`````````PP````#```P! ````L`#PX!`````@'_#P$```!1````````
M`($K'Z2^HQ 9G6X`W0$/5 (`````5$%04B!76"!3<&5C:6%L($EN=&5R97-T
M($=R;W5P`%--5% `=WAS:6= ;&ES=',N=&%P<BYO<F<`````'@`", $````%
M````4TU44 `````>``,P`0```!4```!W>'-I9T!L:7-T<RYT87!R+F]R9P``
M```#`!4,`0````,`_@\&````'@`!, $````A````)U1!4%(@5U@@4W!E8VEA
M;"!);G1E<F5S="!'<F]U<"<``````@$+, $````:````4TU44#I76%-)1T!,
M25-44RY405!2+D]21P````,```#D`````P! .@$````"`?8/`0````0`````
M```$9X\!!( !`"$```!213H@6W=X<VEG72!S;V9T=V%R92 F(%)A:6X@9V%G
M90`*"P$%@ ,`#@```- '! `-`!8`&0`6``0`,0$!!@`!```$````````!(( #
M``X```#0!P0`#0`6``0`# `$`!(!`0F `0`A````-S5%1#DY-T8W1C$Q1#0Q
M,4$X-38P,# P13@Y0C-#,#D`& <!`Y &`, ````D````"P`"``$````+`",`
M``````,`)@``````"P`I```````#`"X```````(!,0`!````& ````````!'
MOT$:9%+3$;@(`$ S0)LGI"(B``,`-@``````0 `Y`(#TM7+)I;\!'@!P``$`
M```A````4D4Z(%MW>'-I9UT@<V]F='=A<F4@)B!286EN(&=A9V4``````@%Q
```





```
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

36. [wxsig] Getting caught up

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 13 Apr 2000 22:25:29 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77404-2000.04.13-23.24.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

All: Sorry for the continued silence. I have been having a tough time getting caught up. Work has been crazy and not allowing me to catch up on personal stuff.

All: I will work on the assembly manual this weekend. I have lots of emails with good data for updates to both manuals that I need to fold in to the documentation.

Steve B: Do you still have the operations manual? There is lots additional information that manual needs that I need to add.

Brian: Cool on the LTP command. Alas without the upgrade I won't be able to play with it for a bit to verify it works. If I understand the way that command works, I won't need to change anything on the weather station code at all, right? If that is the case, can you verify that it works?

Steve/Brian/All: The new page two looks OK. Only thing to keep in mind is
that for the T238, we only need D4-D7, D0-D3 are not connected. You
probably still want the entire interface though as the HUD may use the full
eight-bit interface.

All: How is 1.08.0 release working out. Russ is having a few problems with
some bad packets being transmitted that I do not have a good handle on
right now. It would be good to know if anyone else may be having problems
too and what configurations they are having the problems in.

Aaron: I do need to update the manual on how to enter debug mode. Cycling
power doesn't work reliably. You need to apply power, then press the
"reset" button. (we really should give that button a decent name)

All: Part of my light reading while on the transatlantic flights was on
VC++. I'm still a long way from a new PC downloader and no other
volunteers yet, so we're stuck with the DOS program for a while. It still
could use plenty of other improvements too, LIKE VERIFYING THE DOWNLOAD WAS
SUCCESSFUL! It doesn't do that.

Aaron: I've added your callsign to the data webpage. It'll get uploaded
this weekend at the latest.

Russ C: That erroneous packet with a temperature of -68 I suspect should
have been 068. If you still have the data around that back packet, it
would be handy to know if the good packets around it had a temperature
close to 68. That would give me a good clue on where to look. I have
dashes for default values so that an erroneous data comes up all dashes.
 How one dash gets left while the positive data gets written is confusing,
but if you confirm that is what is happening, then I know where to
concentrate my search.

Joe: Welcome! Don't forget to get the 1.08 release I sent to Russ H.
 That will get you fairly current on software. I should have updated
assembly manuals for you this weekend. Ops manual may not get quite done
this weekend.

Steve B: I have your updates to both manuals. I guess that answers my
earlier question, both manuals are now mine to modify.

Aaron: The clock should be pretty accurate. The clock is based on the
crystal and the timer circuit. I use precise values for that timer, so the
time I keep should be as accurate as the crystal oscillator. Do you have
any way of checking the oscillator accuracy? It looks like you are off by
one part in 60, so that is a pretty big error. My station has been working
reasonably well. Is anyone else seeing this?

Aaron: I will need to look into the RJ-11 +5 volt discrepancy. Running
out of time tonight.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] RE: Getting caught up

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 14 Apr 2000 00:53:22 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77407-2000.04.13-23.54.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Steve B: Do you still have the operations manual? There is lots
> additional information that manual needs that I need to add.

[snip]

> Steve B: I have your updates to both manuals. I guess that answers my
> earlier question, both manuals are now mine to modify.

Will, technically speaking, I still have the operations manual. Like you,
work has been keeping me hoping. In fact, I'm in California until Sunday
evening.

I have been working on the ops manual. I've made some rearragnments and
some editing. Just not ready for release. I hate to send out something
that is have baked, it will only confuse people.

With the holidays next weekend I should be able to find more time to work on
it. If not, I'll pass it to you Russ, with the edits, and you can take my
lead from there.

I finally got my rain guage put together. Now it needs to be calibrated.

Still not hearing word from all the beta testers. How's it going?

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] Rough time line

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 14 Apr 2000 01:01:18 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77413-2000.04.14-00.02.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was thinking to myself about a timeline to get the T238 to production.
Major items that need to be done are getting the assembly and operations
manual upto par.

Then there's the hardware. That's where the beta testers need to let us
know what does and doesn't work. Right now we've identified two hardware
issues. 1) the debug pull down resistor, and 2) negative voltage for
extended temperature LCDs. And there are a bunch of silkscreens that need
changing.

So the question that we need to answer is do we need another board turn? I
am real big on not getting people confused. I don't want to sell a kit that
has fixes. So I guess I am answering my own question that the answer is
possibly yes with respect to a new board turn. Discussion please.

Dayton is fast approaching. Much to my surprise, I (we) need to start
looking for plane tickets. So I am afraid that my goal of having a
production kit by Dayton won't be met. That's okay. We can introduce the
kit and it'll be production a month after I'm sure.

Anyway, any other ideas on timeline issues? Will, I know you sent yours.
Most of yours was softare related as I remember. So it shouldn't impact the
hardware to much.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] RE: Getting caught up

From: "Aaron" <ae4ko@amsat.org>
Date: Fri, 14 Apr 2000 09:39:54 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77449-2000.04.14-08.39.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Still not hearing word from all the beta testers. How's it going?
>
> - Steve

I have been meaning to consolidate my notes an post them, but I
too have been busy this week (maybe it's a moon phase thing
<grin>) I will try to get to that this weekend as well.

In general things have been working well. Today is the first time we
have had any appreciable rain since I got the kit so I will have
something to look at tonight when I get home. (I think there might
be a problem with the on-air TNC reporting format for the rain, but I
haven't investigated it beyond the fact that rain totals are not
showing on a TM-D700A...)

Back to work....

73

(Random Quote)
    Intuition (n): an uncanny sixth sense which tells people
    that they are right, whether they are or not.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Re: Getting caught up

From: "Aaron" <ae4ko@amsat.org>
Date: Fri, 14 Apr 2000 09:44:46 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77452-2000.04.14-08.43.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Folks:
>
> All: Sorry for the continued silence. I have been having a tough time
> getting caught up. Work has been crazy and not allowing me to catch
> up on personal stuff.
>
We all know and can definitely empathize.

>
> All: How is 1.08.0 release working out. Russ is having a few problems
> with some bad packets being transmitted that I do not have a good
> handle on right now. It would be good to know if anyone else may be
> having problems too and what configurations they are having the
> problems in.

Generally ok, but rain totals are not showing on a TM-D700A when
in the 5min TNC mode. (definitely more investigation needed here
to be sure it's a real problem)

>
> Aaron: I do need to update the manual on how to enter debug mode.
> Cycling power doesn't work reliably. You need to apply power, then
> press the "reset" button. (we really should give that button a decent
> name)

I figured it out, but wanted to make sure the docs were updated.

>
> All: Part of my light reading while on the transatlantic flights was
> on VC++. I'm still a long way from a new PC downloader and no other
> volunteers yet, so we're stuck with the DOS program for a while. It
> still could use plenty of other improvements too, LIKE VERIFYING THE
> DOWNLOAD WAS SUCCESSFUL! It doesn't do that.

I think I can help on this; I just don't know if I can finish by Dayton,
however.

>
> Aaron: I've added your callsign to the data webpage. It'll get
> uploaded this weekend at the latest.
>

Anytime...

>
> Aaron: The clock should be pretty accurate. The clock is based on

> the crystal and the timer circuit. I use precise values for that
> timer, so the time I keep should be as accurate as the crystal
> oscillator. Do you have any way of checking the oscillator accuracy?
> It looks like you are off by one part in 60, so that is a pretty big
> error. My station has been working reasonably well. Is anyone else
> seeing this?

I have been wanted to check those xtals for a week now, but just
haven't gotten to it. This weekend!

>
> Aaron: I will need to look into the RJ-11 +5 volt discrepancy.
> Running out of time tonight.
>

ok.

> will
>

(Random Quote)
A little leaven leaveneth the whole lump. (GAL 5:9)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] Re: Getting caught up

From: "Brian B. Riley, ka2bqe" <ka2bqe@amsat.org>
Date: Fri, 14 Apr 2000 15:41:36 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77544-2000.04.14-14.40.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: William Beals <wmbeals@compuserve.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Friday, April 14, 2000 12:25 AM
Subject: [wxsig] Getting caught up

> Brian: Cool on the LTP command. Alas without the upgrade I won't be able
> to play with it for a bit to verify it works. If I understand the way
that
> command works, I won't need to change anything on the weather station code
> at all, right? If that is the case, can you verify that it works?

 Well actually you will need one change, that would be to bypass the TNC
'management' code. that is to say, DO NOT SEND any of the commands to ensure
the TNC is in CONVerse mode. That should be a simple enough code construct.
I would imagine it will be more work to add the option to the menu than to
enable that option. That is all we need sent will be the weather data
string.

I am finally getting out from under here. had a major disk crash and several
other things go worng. I strated assmebling the t238 last night. I have all
the resistor in place ... not much, but a start. I am going to an APRS
gathering in Ottawa tomorrow so this weekend is shot. I hope to get dowen to
it and finish it by Wednesday.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] Re: Getting caught up

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 14 Apr 2000 16:52:50 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77560-2000.04.14-15.53.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I am finally getting out from under here. had a major disk crash
> and several
> other things go worng. I strated assmebling the t238 last night.

> I have all
> the resistor in place ... not much, but a start. I am going to an APRS
> gathering in Ottawa tomorrow so this weekend is shot. I hope to
> get dowen to
> it and finish it by Wednesday.

Awh! But Brian, please take the T238 weather station to Ottawa and show it
off! Gather comments and ideas.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] Getting caught up

From: John Koster <w9ddd@tapr.org>
Date: Sat, 15 Apr 2000 17:37:54 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77772-2000.04.15-17.40.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, just started unpacking my wx station and rain gauge from Dallas
Semi. (was on my door step when I got back in town yesterday).

Dumb question time.

What no software disk?

Can you assemble and test the rain gauge without the wx station up and
running. I'd rather start with the simple one.

Did anyone figure a clean way of opening the PCB mounting holes? I ended up
with the rubbery material sticking to the screws as I threaded them
through and pulling away from the PCB. Too late for me, but something to
document for others if someone knows a good trick.

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] Re: Getting caught up

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 15 Apr 2000 17:49:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77778-2000.04.15-18.50.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John Koster wrote:

> What no software disk?

The software for the 1-Wire weather station is available on the Callas
Semiconductor web page http://ibutton.com   click on the weather station

> Can you assemble and test the rain gauge without the wx station up and
> running. I'd rather start with the simple one.

Yes, you use the software referred to above. It's good to have to make sure
that the weather station is working. If you tell Dallas Semi that your weather
station doesn't work, the first thing they'll ask is what happens when you run
it with their weather station software.

> Did anyone figure a clean way of opening the PCB mounting holes? I ended up
> with the rubbery material sticking to the screws as I threaded them
> through and pulling away from the PCB. Too late for me, but something to
> document for others if someone knows a good trick.

Yes, I used progressively bigger twist drills by hand (actually spinning
between my fingers) to clean out the holes without breaking the rubber seal to
the circuit board. I started with 1/64" and worked up until the hole was just

the right size for the screw.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] Time and schematics

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 15 Apr 2000 17:58:45 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77790-2000.04.15-20.37.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron:

Any new news on the time? I've checked my clock quite a bit lately, and it
seems to be keeping good time. Over a two-week period it seems to have
lost about 25 seconds.

Also, I looked up the discrepancy on the board versus the published
schematic. The schematic on my website was out of date. I have updated it
and will upload soon. Thanks for noticing.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] Rain Formats

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 15 Apr 2000 18:29:12 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77791-2000.04.15-20.37.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron:

Do you know which format the TM-D700A uses for rain? There are three different rain reporting formats:
r = rainfall (in hundredths of an inch) in the last hour.
p = rainfall (in hundredths of an inch) in the last 24 hours.
P = rainfall (in hundredths of an inch) since midnight.

I do the P (since midnight) format.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

47. [wxsig] Timelines

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 15 Apr 2000 18:20:12 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77793-2000.04.15-20.38.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

Per Steves request on a timeline. I just finished updating the assembly
manual to (amongst other things) include the instructions for the LCD
cable. I didn't get the cable pieces, so I just built my own. Looking at
those instructions though, it clearly looks like the cable building is the
nastiest and likely most error-prone part of the project. If we are going
to touch the board to correct the reset problem and high-temp LCD problem,
I would also like to look quite seriously at adding another header in a
1x14 format for the LCD. I'm the first to admit finding room for such a
header won't be easy. If that can't be done, we should at least make an
adapter board that converts between the two formats.

Here is the list of things for the PWB that I have accumulated:
1) Identify DE-9 connector functions
2) Mark pin 1 better on headers
3) Incorporate Reset rework
4) Incorporate extended temperature LCD rework
5) Identify regulator polarity better
6) Any chance of a 1x14 header for the LCD?

Software-wise I'm feeling reasonably good. I still need to chase down that
occasional problem reported by Russ on his and my weather stations sending
out bad data. That concerns me a lot as bad data is really annoying.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Re: Getting caught up

From: "Brian B. Riley, ka2bqe" <ka2bqe@amsat.org>
Date: Sun, 16 Apr 2000 00:21:39 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77813-2000.04.15-23.22.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Steven R. Bible <srbible@gate.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Friday, April 14, 2000 4:52 PM
Subject: [wxsig] Re: Getting caught up

> > I am finally getting out from under here. had a major disk crash
> > and several
> > other things go worng. I strated assmebling the t238 last night.
> > I have all
> > the resistor in place ... not much, but a start. I am going to an APRS
> > gathering in Ottawa tomorrow so this weekend is shot. I hope to
> > get dowen to
> > it and finish it by Wednesday.
>
>
> Awh! But Brian, please take the T238 weather station to Ottawa and show
it
> off! Gather comments and ideas.

  show _WHAT_ off, a board half populated with resistors????? I did however

talk about the project and the one-wire system and there seems to be a lot
of interest in weather telemtry up there.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] download etc.

From: John Koster <w9ddd@tapr.org>
Date: Sun, 16 Apr 2000 08:45:28 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77899-2000.04.16-08.46.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Sat, 15 Apr 2000, Russ Chadwick wrote:

> John Koster wrote:
>
> > What no software disk?
>
> The software for the 1-Wire weather station is available on the Callas
> Semiconductor web page http://ibutton.com click on the weather station
>

I was looking for a simple check out package. Guess that's not in
anyone's vision of things these days. It appears the days of writing a
simple asm or C routine for checking out the hardware are gone.

I downloaded about 6 Mb of stuff yesterday evening. Glad the S/W for
T238 isn't that bloated.

>
> > Can you assemble and test the rain gauge without the wx station up and
> > running. I'd rather start with the simple one.
>
> Yes, you use the software referred to above. It's good to have to
> make sure that the weather station is working. If you tell Dallas
> Semi that your weather station doesn't work, the first thing they'll
> ask is what happens when you run it with their weather station
> software.
>

I guess you're saying yes. I'm a little confused about all the comments
I'm hearing about the software (both Dallas and T238) needing to find
things in the right order and getting confused if things come and go.

> > Did anyone figure a clean way of opening the PCB mounting holes? I ended up
> > with the rubbery material sticking to the screws as I threaded them
> > through and pulling away from the PCB. Too late for me, but something to
> > document for others if someone knows a good trick.
>
> Yes, I used progressively bigger twist drills by hand (actually
> spinning between my fingers) to clean out the holes without breaking
> the rubber seal to the circuit board. I started with 1/64" and
> worked up until the hole was just the right size for the screw.
>

I know we're not in the business of supporting Dallas' kits, but there
ought to be an appropriate place to put this little hint. I have to
admit part of my problem was having a new toy and anxious to play.

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] Test Software

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 16 Apr 2000 09:34:06 -0600

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77921-2000.04.16-10.29.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

Alas there is no real easy way to do a sanity check on all the hardware without using the Dallas weather software. If you do want some basic checkout software (still big, but more just for playing with sensor IDs and such), Dallas offers some software called the iButton Viewer. It is also on their website (somewhere). That is the software I play with when I am bringing up a sensor for the first time and want to just get an idea of the IDs and such and play with the contents of the 1-Wire device. It knows nothing about weather but does allow you to see counters count and that kind of stuff.

The reason for all the "calibrating" you hear about is for wind direction. What the sensor package offers is eight sensors, each with a unique serial number, but no specified order. The calibrating that we (PC sw and T238) is to teach the display code what the sensor IDs are and what order they are inside the outdoor unit. A similar principal applies for the wind speed and rain guage. They both use the same kind of sensor (a counter) and if both exist on the bus at the same time, there is no way to tell them apart. Again, the general idea is to find an easy way for the customer to distinguish them.

Speaking of the above problem, I just had another idea on telling the rain guage from the wind speed sensor. Remove power for a while on the bus. The wind speed sensor counter will reset to 0 while the rain guage will not, it has a battery. Biggest problem is that if another sensor comes along, that will be a short-lived approach.

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] rains gauge

From: John Koster <w9ddd@tapr.org>
Date: Sun, 16 Apr 2000 19:20:36 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77984-2000.04.16-19.21.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, first run on the calibration give me .90" for the 16 oz. I need more counts, or less water per bucket. Instinct tells me to turn the screws in, but not sure. Did I miss something in the instructions? Also any hints as to how much to turn them?

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Re: rains gauge

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 16 Apr 2000 18:51:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-77988-2000.04.16-19.53.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John Koster wrote:

> OK, first run on the calibration give me .90" for the 16 oz. I need more
> counts, or less water per bucket. Instinct tells me to turn the screws
> in, but not sure. Did I miss something in the instructions? Also any
> hints as to how much to turn them?

Your instinct seems right. Turning in lifts the down side and this moves the
up side center of mass closer to tipping which will result in more tips for
the same amount of water which is what you need. I calibrated with 32 oz. of
water and got to 199 counts (out of 200). The last adjustment was a quarter
of a turn of both. So, you might start with a full turn.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Re: rains gauge

From: John Koster <w9ddd@tapr.org>
Date: Sun, 16 Apr 2000 21:20:40 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78002-2000.04.16-21.21.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> Your instinct seems right. Turning in lifts the down side and this moves the
> up side center of mass closer to tipping which will result in more tips for
> the same amount of water which is what you need. I calibrated with 32 oz. of
> water and got to 199 counts (out of 200). The last adjustment was a quarter
> of a turn of both. So, you might start with a full turn.
>

OK, my first adjustment was a full turn (on both) and it got me only .2
more. So I went for two more turns, and it looks like I'm going to get
about 1.10". It sure drips slower towards the end.

So this says we're not talking a linear adjustment here (not suprising)

I like the idea of using 32 oz. I'll do that on my next iteration.

JK

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Re: Time and schematics

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 16 Apr 2000 22:27:34 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78004-2000.04.16-21.28.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 15 Apr 2000, at 17:58, William Beals wrote:

> Aaron:
>
> Any new news on the time? I've checked my clock quite a bit lately,
> and it seems to be keeping good time. Over a two-week period it seems
> to have lost about 25 seconds.
>

I finally had a chance to put my scope on the xtal osc output, and
as far as I can tell it's 32MHz. If I did my math right, a 1 in 60 error
(slower) would result in a clock rate of 32MHz - 0.53MHz, or about
 0.005us difference in the period from a true 32MHz period. I didn't
see that, but that is also about the limit of my scope, too (60MHz)

> Also, I looked up the discrepancy on the board versus the published
> schematic. The schematic on my website was out of date. I have
> updated it and will upload soon. Thanks for noticing.
>

That's what beta's are for. <grin>

> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: ae4ko@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

Random Quote:

Synonym (n): Word used in place of a word you can't spell.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] Re: download etc.

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 16 Apr 2000 22:44:26 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78007-2000.04.16-21.45.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 16 Apr 2000, at 8:45, John Koster wrote:

>
> I was looking for a simple check out package. Guess that's not in
> anyone's vision of things these days. It appears the days of writing
> a simple asm or C routine for checking out the hardware are gone.
>

If you have a Linux computer, then I have some C code that will
help. (Actually it's pretty much code Dallas released some time
ago) It's not too complicated and probably could be compiled for
DOS. There are two programs that I use; find_all_devices will list
the id's of everything on the bus, and sample_devices which
outputs a timestamp, device ID, and value for each device on a
semi-regular basis.

Visit link below for an example of that code in action (with some
perl code on top of that doing the calculations and graphs) -- watch
the word wrap.

http://ae4ko.com/Repeater_Site/Wind_Conditions/wind_conditions.
html

Let me know if you want it.

Aaron

Random Quote:

Everyone makes mistakes, if not we'd be single!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] Naughty boy

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 16 Apr 2000 21:20:35 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78013-2000.04.16-22.16.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

After making statements earlier this weekend about feeling confident in the
software, I may have found the problem with the occasional bad readings
that Russ has been reporting. Since the problem was so rare, I figured
that it was some kind of race condition or something weird like that. When
I converted over all my sampling and UART code over from the main routine
to interrupt service routines, I may have created some problems. I share
some routines between the mainline LCD display routines and the interrupt
routines. Sharing routines is OK unless they use some static data
structures. Guess what I do. In computer science-ese, these shared
routines are not fully re-entrant. I could start using that routine in the
mainline code, then before finishing that routine, an interrupt could occur
that would run the same routine as part of the interrupt and mess up all
the data. This is a definite no-no.

At this point I'm willing to bet that this is what would be happening since
it happens so rarely. There are several ways of fixing this, I'm mulling
them over to see which is the best solution. The easiest is to duplicate
all the routines and data structures for mainline and interrupt so they
don't conflict, but I don't want to do that. I am thinking of some kind of
flag that can be set that would tell the mainline code it got interrupted
and it should start over again. I'm going over the code now to make sure
that the only conflict is the LCD versus UART code. There may be other
places.

At least the problems I'm running into are getting more obscure.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] Re: Rain Formats

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 16 Apr 2000 23:17:54 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78014-2000.04.16-22.19.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 15 Apr 2000, at 18:29, William Beals wrote:

> Aaron:
>
> Do you know which format the TM-D700A uses for rain? There are three
> different rain reporting formats: r = rainfall (in hundredths of an
> inch) in the last hour. p = rainfall (in hundredths of an inch) in the
> last 24 hours. P = rainfall (in hundredths of an inch) since midnight.
>
> I do the P (since midnight) format.

"P" or "p"? (the xmitted packet uses "p")
>

After a bit of investigation, (we actually had some rain here today to
do this!) I can see what happened.

Essentially, the kenwood uses the "r" format in it's main display
(and the manual also calls it 'Amount of rainfall in the past hour').
The display shows wind direction, wind speed, temp, and rain (the
"r" figure) and then displays the rest of the packet on the next row.

So a packet like (taken from live data),

_04170255c274s000g004t071r012p106P106h97b10195wRSW

would show the following on the bottom 2 lines:

dir274(d) s000m t071(d)F r0.12"
p106P106h97b10195wRSW

where (d) is the degree symbol.

and since the current T238 code produces
_04170205c266s000g000t066p014e1w

the kenwood showed 0.00" for rain since there is no "r" telemetry.
Thus the "mystery" is solved. I guess the real "solution" to the
"problem" is to include all 3 scales (well, at least the "r" scale).

73

Random Quote:

My car isn't broken down, it's mechanically challenged!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

58. [wxsig] Re: Naughty boy

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 16 Apr 2000 23:40:06 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78015-2000.04.16-22.40.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 16 Apr 2000, at 21:20, William Beals wrote:

> I am thinking of some kind of flag that can be set that would tell
> the mainline code it got interrupted and it should start over
> again.

I guess I really need to look over the 68908 stuff, but on the 6502
and 6811 series there are interrupt enable/disable instructions to
mask all but the non-maskable interrupts just for this kind of
process.

>
>
> At least the problems I'm running into are getting more obscure.
>

Always a good sign! <grin> We have a saying here at work; "If it
compiles, ship it!"

> will

Random Quote:

Velcro, super glue, duct tape, and post-its! What more do we need?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

59. [wxsig] Rain Formats

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 18 Apr 2000 07:04:38 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78370-2000.04.18-08.16.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

Aaron: Yes, after checking that I should have 'P', not 'p'. Oops. That
will get changed in the next release.

All: Bummer that the Kenwoods only look at the 'r' format. That is very
expensive RAM-wise to implement correctly. I would need to keep a running
tally of the last 12 5-minute samples in RAM and that would only be
accurate to the nearest five minutes over the past hour. The "last 24
hours" reading has the same problem, only worse in terms of RAM usage.
 "Rain since midnight" only takes one ram location as it is not a running
tally. I'll fumble around with this some more, I'd like my Kenwood TH-D7A
to work too.

All: Is it just me or does that data seem an awful limited timespan for
getting data? An hour after the storm, you'd have no record of it
happening!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] Stopping interrupts

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 18 Apr 2000 07:11:28 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78371-2000.04.18-08.16.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron:

Stopping interrupts would solve the conflict, but it would also screw up
all my timing for gathering and reporting data. For now I am considering
the interrupt routines "holy territory" and want to fix the problem in the
mainline code.

Thinking about it more... If there is a way I can guarantee that disabling
interrupts will be for a very short and deterministic time (mainly no LCD
polling loops), maybe I could get away with disabling interrupts........

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] Re: Rain Formats

From: Steve Dimse <sdimse@earthlink.net>
Date: Tue, 18 Apr 2000 10:31:13 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78392-2000.04.18-09.32.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 4/18/00 9:04 AM William Beals (wmbeals@compuserve.com) wrote:

>All: Bummer that the Kenwoods only look at the 'r' format. That is very
>expensive RAM-wise to implement correctly.

You can still look at the raw data on the display and figure out what the
other values are, that is just the one that is parsed. Picking one is not
an easy choice. If I had to make the call, I'd probably say the 1 hr is
the one to do, because generally the D700's are mobile, and if you are in
your car, you care about what is happeneing now, not averaged over a day
or since midnight...

>All: Is it just me or does that data seem an awful limited timespan for
>getting data? An hour after the storm, you'd have no record of it
>happening!
>
It is not meant to be one or the other, all are supposed to be
transmitted.

There are problems even with just the 1hr and 24hr, look at the weather
graphs of WU2Z

http://www.findu.com/cgi-bin/wxpage.cgi?call=WU2Z&last=48

You can see they had a slow, steady rain for about 18 hours. Had it gone
on for a few more hours, it becomes impossible to tell graphically the
cumulative totals...you have to look back 24 hours and figure out what
was happening then to interpret what the current curve means, just as you
must look back an hour on the other curve to understand what is happening
with that curve.

That is the reason for the midnight rain...it provides a sharp dropoff at
a set time, making it easy to judge cumulative rainfalls. I haven't
implemented yet on the graph, but it is on the list...

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] Re: Stopping interrupts

From: "Aaron" <ae4ko@amsat.org>
Date: Tue, 18 Apr 2000 10:50:27 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78395-2000.04.18-09.49.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Aaron:
>
> Stopping interrupts would solve the conflict, but it would also screw
> up all my timing for gathering and reporting data. For now I am
> considering the interrupt routines "holy territory" and want to fix
> the problem in the mainline code.
>
> Thinking about it more... If there is a way I can guarantee that
> disabling interrupts will be for a very short and deterministic time
> (mainly no LCD polling loops), maybe I could get away with disabling
> interrupts........
>

Basic questions.

Is this in C or assembler? (I bet assembler) Perhaps disable the
interrupt just long enough to set a semaphore for the mainline code
to do something else... Or perhaps (and this is probably a
significant rewrite) change to a queued type of system. Keep the
interrupts for the major stuff like keyboard handler and sensor
processing, but put the data to be displayed in a queue and loop
around servicing that queue (basically making the display event
driven) -- Just throwing out an idea.

Also (I'm at work and I don't have all the stuff around to check) is
MON08.exe something you wrote or from motorola? And does it
do more than just pump an S19 file to the processor?

> will

Aaron

(Random Quote)
POW: "Pwitty Obwious Weelly" said Wabbit!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

63. [wxsig] Re: Rain Formats

From: Steve Dimse <sdimse@netrox.net>
Date: Tue, 18 Apr 2000 11:50:01 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78403-2000.04.18-10.50.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 4/18/00 10:31 AM Steve Dimse (sdimse@earthlink.net) wrote:

>That is the reason for the midnight rain...it provides a sharp dropoff at
>a set time, making it easy to judge cumulative rainfalls. I haven't
>implemented yet on the graph, but it is on the list...
>
I implemented it, and it looks terrible. See all three on one graph at

http://www.findu.com/cgi-bin/rain1.cgi?call=WU2Z&last=48

I think the best option is 1 hour rain and rain since midnight, that is
what is up on the web site now. I welcome any suggestions or dissenting
opinions...

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] rain formats

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 18 Apr 2000 21:25:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78543-2000.04.18-23.08.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

The rain format stuff doesn't provide easy conclusions. It seems the
rain-since-midnight lets you know unambigously the rain to date (real
obvious!), but also allows you to know the delta rain between any two
samples as long as they don't span midnight. Besides me not liking to chew
up memory keeping running 12 running totals, receiving programs have no way
to tell what any recent rains are because they are being totalled over a
longer period. If it wern't for the Kenwood radios, the midnight format
would be completely sufficient.

Having said all that, I think I am still obliged to implement the 1-hour
running total somehow. It'll have a granularity of 5 minutes.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] Code tribulations

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 18 Apr 2000 21:39:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78545-2000.04.18-23.08.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron:

For starters, the source code (in assembly) is on the website if you are
curious.

The idea of disabling interrupts for a bit is tempting. I very much want
to leave all the data gathering and reporting code in the interrupt
routines, that way my mainline UI code doesn't have to worry about
synchronizing with any of the data gathering/reporting stuff. No matter
what the solution, my first task is going to be to go through every single
variable and routine and catalog them by mainline and interrupt.

MON08.EXE is my own program. It talks to my downloader and does the needed
handshaking to identify the downloader, wait for the erase to finish, then
provide the data to the downloader to program into the Flash in the needed
chunks. I have purposely made the downloader VERY dumb to keep it small.
 The core routines have to fit in RAM (since Flash is being programmed) and
the RAM consumed has to be subtracted from the application RAM. Alas I
made it a bit too dumb and it is missing some connfirmation features. A
(hopefully) pretty good description of the protocol is in the mymon.asm
file in the source code fileset.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

66. [wxsig] Benefit of wind direction averaging

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 19 Apr 2000 19:28:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78750-2000.04.19-20.30.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Last night here in Boulder, CO, we had a wind storm. You can see the
record of my weather station at

http://wx.findu.com/kb0tvj-5

My location is somewhat sheltered and so I don't get the real high winds
that Boulder is famous for. And trust me, I'm glad for that.

I noticed that my weather station does not display the 5 second wind
direction of WSW when the wind is from that direction. Last night, even
though the wind was generally from the SSW to WNW quadrant, the unit
would only display SSW, SW, W, WNW. However, if you look at the wind
direction reported during the wind storm, it clearly covers WSW. This
is because of the wind direction averaging algorithm that we use. So,
even though, due to some mechanical problem. the unit will not measure
WSW, the average direction that is sent out every 5 minutes is almost
unaffected and is good wind direction data.

I plan on taking the unit down and looking into why it won't indicate
WSW, however, that'll have to be done on the bench.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

67. [wxsig] Re: Benefit of wind direction averaging, clarification

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 19 Apr 2000 20:12:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78752-2000.04.19-21.13.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What I said below may be somewhat misleading. I am saying that the averaged wind direction won't be greatly affected when one sector (of the total number of 16) is not being indicated properly. I am not saying that the wind direction will work fine when one reed switch is not working.

Note that when one reed switch is not working, then 3 adjacent sectors will not be indicated when they should. The absence of 3 adjacent sectors will probably have a significant effect on the averaged wind direction while the absence of one sector probably won't have a significant effect.

I don't know why a single sector would be inoperative. Maybe the magnet is too far above two particular reed switches to activate them both. However, the problem is not that one of the reed switches is broken, i.e. completely inoperative. Because then 3 sectors would be missing.

Russ Chadwick wrote:

> Last night here in Boulder, CO, we had a wind storm. You can see the
> record of my weather station at
>
> http://wx.findu.com/kb0tvj-5
>
> My location is somewhat sheltered and so I don't get the real high winds
> that Boulder is famous for. And trust me, I'm glad for that.
>
> I noticed that my weather station does not display the 5 second wind
> direction of WSW when the wind is from that direction. Last night, even
> though the wind was generally from the SSW to WNW quadrant, the unit
> would only display SSW, SW, W, WNW. However, if you look at the wind
> direction reported during the wind storm, it clearly covers WSW. This
> is because of the wind direction averaging algorithm that we use. So,
> even though, due to some mechanical problem. the unit will not measure
> WSW, the average direction that is sent out every 5 minutes is almost
> unaffected and is good wind direction data.
>
> I plan on taking the unit down and looking into why it won't indicate
> WSW, however, that'll have to be done on the bench.
>
> Russ
> kb0tvj
>
> ---
> You are currently subscribed to wxsig as: kb0tvj@bouldernews.infi.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] Re: Benefit of wind direction averaging

From: Steve Dimse <sdimse@netrox.net>
Date: Wed, 19 Apr 2000 22:41:32 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78758-2000.04.19-21.42.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 4/19/00 9:28 PM Russ Chadwick (kb0tvj@bouldernews.infi.net) wrote:

>However, if you look at the wind
>direction reported during the wind storm, it clearly covers WSW. This
>is because of the wind direction averaging algorithm that we use. So,
>even though, due to some mechanical problem. the unit will not measure
>WSW, the average direction that is sent out every 5 minutes is almost
>unaffected and is good wind direction data.

Another thing it hides well is the granularity of the weather station ;-)

Seriously though, this is one of the better wind plots I have seen. Look at a more typical plot from my station:

http://wx.findu.com/k4hg

While it is pretty clear where the wind direction is coming from, it is
the eye doing the averaging, not the software. Anyway, makes me think
about working more on this CGI, since especially at the longer time
periods each horizonal pixel represents multiple readings. It'd probably
be nice to add this to the other APRS programs.

One thing I do notice though is that the tracing looks worse at lower
wind speed than at my station. Looking at other points where the winds
pick up the pattern seems to repeat...higher wind speeds means a tighter
pattern. Any idea why this would be? Something mechanical perhaps?

Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] Re: Benefit of wind direction averaging

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 19 Apr 2000 20:59:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78762-2000.04.19-22.00.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Dimse wrote:

>
>
> Seriously though, this is one of the better wind plots I have seen. Look
> at a more typical plot from my station:
>
> http://wx.findu.com/k4hg
>
> While it is pretty clear where the wind direction is coming from, it is
> the eye doing the averaging, not the software. Anyway, makes me think
> about working more on this CGI, since especially at the longer time
> periods each horizonal pixel represents multiple readings. It'd probably
> be nice to add this to the other APRS programs.
>
> One thing I do notice though is that the tracing looks worse at lower
> wind speed than at my station. Looking at other points where the winds
> pick up the pattern seems to repeat...higher wind speeds means a tighter
> pattern. Any idea why this would be? Something mechanical perhaps?
>

Here's another set of weather data from a professional meteorological site
about 3 miles to the west of me. It's located just west of the Boulder
Municipal Airport. This is from a surface weather station that probably
costs $20K and is run by professionals. You see that higher speeds cause a
tigher wind direction for their expensive equipment too.

http://www.atd.ucar.edu/cgi-bin/flabweatherE

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

70. [wxsig] Re: Benefit of wind direction averaging

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 19 Apr 2000 22:41:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-78780-2000.04.19-23.42.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Dimse wrote:

> One thing I do notice though is that the tracing looks worse at lower
> wind speed than at my station. Looking at other points where the winds
> pick up the pattern seems to repeat...higher wind speeds means a tighter
> pattern. Any idea why this would be? Something mechanical perhaps?

>

Since I put up the weather station, I've spent considerable time looking at
the wind vane and verifying that the reported wind direction is what the wind
vane indicates. After living here for 29 years, I would have guessed that
the wind is mainly out of the west. My observations say "No so". The high
winds are almost always westerly, but the light winds are easterly as much as
westerly.

My conclusion is that if there is no strong forcing wind, the wind direction
really does meander and swing around. I don't think that this is an error in
the measuring device. So, smoothing the direction data may just be
introducing smoothness that's really not there.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] Quiet on the weather front

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 22 Apr 2000 08:48:42 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79239-2000.04.22-09.50.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Things are pretty quiet on the reflector!

My wife and kids left me for her parents for a couple weeks, so I have time
to play on the weather station without feeling guilty about abandoning
them.

I've been quiet mainly because I have a pretty big job getting my
interrupt/mainline code separated and organized. To do this right I need
to through ALL my code line by line and make sure I know which variables
are used in the mainline code and which are used in the interrupt service
routines and clearly distinguish them. With 7000+ lines of code, this will
take a while. Once I get that figured out, there are several ways of
avoiding the conflict, but I need the basic data first.

I am going to need some distractions from the code review to prevent me
from going crazy...

Steve: I am thinking of putting the assembly manual and rework
instructions on the website for reference purposes. I can't find where I
posted the reset button rework on this reflector, so that should get posted
as well. In addition to needing other breaks from code review, I was
hoping to work on the operations manual this weekend too. How is that
going on your end?

Any decision on a board spin? Are "we" going to do it? I am pretty sure
at this point we have enough experience with the current board to know what
needs fixing and what doesn't.

BTW: Circuit Cellar Ink send Russ and I the consent forms to publish the
article. It will be going in the printed version of their magazine! Date
currently unknown.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

72. [wxsig] RE: Quiet on the weather front

From: "Steven R. Bible" <srbible@gate.net>
Date: Sat, 22 Apr 2000 11:54:44 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79257-2000.04.22-10.56.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

[snip]

> Steve: I am thinking of putting the assembly manual and rework
> instructions on the website for reference purposes. I can't find where I
> posted the reset button rework on this reflector, so that should
> get posted
> as well. In addition to needing other breaks from code review, I was
> hoping to work on the operations manual this weekend too. How is that
> going on your end?

I have started on the operations manual. I made some rearrangements to make
the sequence flow a little better. I am using the assumption that people
just finished the assembly and then go right to the ops manual. How about I
send the rough to you and Russ to look over. The ops manual is time
consuming and I need to get on it!

> Any decision on a board spin? Are "we" going to do it? I am pretty sure
> at this point we have enough experience with the current board to
> know what
> needs fixing and what doesn't.

I'm asking for opinions on this one. I'm leaning towards the fact that
we'll have to do another run to make the minior corrections we found.

> BTW: Circuit Cellar Ink send Russ and I the consent forms to publish the
> article. It will be going in the printed version of their
> magazine! Date
> currently unknown.

I noticed in the April issue on page 95, the preview of next issue, they
have "Weather Date -- Getting More than One Wire's Worth"

That's got to be it, right? And it looks like you are article number 2!
Congraduations making the printed version. You have a great project here.
What pictures did they take.

Rain Guage - Will, can you put into the code the calibration of the rain
guage?

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

73. [wxsig] Rain

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 22 Apr 2000 14:02:42 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79290-2000.04.22-14.57.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve:

Yes, the manual work is time consuming!

A am neutral on spinning the board IF we come up with a PCB adapter for the
1x14 LCD interface. If not, then I think a PWB spin including a 1x14
header would be a very good idea.

Sounds like we are in the next issue of Circuit Cellar Ink. I placed my
subscription order via the web this morning. Hopefully I'm all set. The
picture they used was the one I took of the PCB on my workbench. Russ did
quite a bit of editing to get rid of a bunch of blemishes I neglected to
worry about.

Steve: On the rain guage calibration. Can I suggest that you essentially
have rain guage calibration support. Note the rain guage reading, dump

(slooooowly) the required rain into the funnel and you should have exactly
1.00 inches more. Were you thinking of something that could get reset or
show raw counts? BTW: if you want to issue a reset you can do so, just
re-run the rain guage sensor calibration. When you do that, all the
numbers get reset to zero. That way you can count up to 1.00 inches
precicely.

We have a rain storm about to roll through. I'm bummed I don't have my
outside rain guage hooked up yet...

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

74. [wxsig] Rain Gauge Deployed

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>

Date: Sat, 22 Apr 2000 16:23:41 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79304-2000.04.22-17.31.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I got my rain gauge calibrated to 101 counts for 16 oz. of water. I
have software version 1.08 running and the rain gauge is deployed
outside. The rain gauge and thermometer (in a ventilated radiation
shield) is about 15 feet north of my garage. The anemometer and wind
vane is south of the garage 22 feet in the air. Everything seems to be
working. The rain gauge registered .01" in a brief shower that we just
had. More rain predicted this evening so the rain gauge may be tested
in the field, literally.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

75. [wxsig] Updates

From: William Beals <wmbeals@compuserve.com>

Date: Sat, 22 Apr 2000 22:05:33 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79336-2000.04.22-23.00.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

(8am-10pm un-interrupted on the weather station today! (well, food and
potty breaks))

I have completed the code modifications to seperate the routines that were
shared between the mainline code and the interrupt routines. The easiest
way ended up being to duplicate the routines that were shared and have them
use different variables. The total cost was a lot less than I expected.
 Five routines needed to be duplicated and a whopping eight bytes of RAM
needed to be added. The seperation process was entirely manual and could
be error prone. Time will tell.

Other updates to the code include "month-to-date" rain guage support,
fixing the "rain-since-midnight" identifier from 'p' to 'P', and not
broadcasting the rain stats if no rain guage has been calibrated. I assume
you are all fairly happy with the current 1.08.0 release so I can continue
adding features without resorting to an intermediate release. The two

things I would like to include before the next release is the
"rain-this-past-hour" support (messy!) and some more tinkering around with
communications error handling. Russ was getting some bad data when he was
getting lots of errors and I want to see if there is something I can do to
handle that more gracefully.

PLEASE NOTE, NON-TRIVIAL WEBSITE UPDATE! I did some pretty significant
edits to the website today. Of particular note is that I took the "how to
build it" page, updated the schematic, threw in the assembly and operations
manuals as well as the two current sets of rework that are needed along
with pictures. I don't think I ever emailed the picture for the reset
button rework, so here is the way to do it. I also updated quite a few
other things too. See the history page for the complete list.

Tomorrow I will get a bit of time on the weather station, but have other
plans that will prevent a full day WX-ing.

HAPPY EASTER!!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

76. [wxsig] Russ found a bug

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 24 Apr 2000 22:13:51 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79790-2000.04.24-23.08.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Russ found a typo in my wind direction text. He never saw WSW for a wind
direction because it was missing in my table. I mistakenly entered SSW in
its location and missed it during the manual check. Good catch!

I am going to go ahead and publish the 1.08.1 release. Russ is getting
ready for a hamfest (and I think someone else is too) and this release has
the support for the 4 lines of the LCD, something that would be handy to
show off. Here is the list of items new on this release since 1.08.0.
* Fixed rain-since-midnight flag from 'p' to 'P'.
* Resolved mainline/interrupt variable conflicts.
* Added monthly rain counter
* Removed rain data in TNC string when no rain sensor present.
* Added up to three tries for wind direction reads (should get fewer
errors)
* Added LTP-mode for cool TNCs (that I need to get)
* Fixed typo in wind direction text.

I will post this release on the website tonight. That will give me time to
work on the 'r' rain format that will take a bit to implement.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

77. [wxsig] Re: Russ found a bug

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 25 Apr 2000 05:34:16 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79857-2000.04.25-06.35.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> I am going to go ahead and publish the 1.08.1 release. Russ is getting
> ready for a hamfest (and I think someone else is too) and this release has
> the support for the 4 lines of the LCD, something that would be handy to
> show off.

Steve B.

I've not received the 4 line LCD display module. Have you sent it?

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

78. [wxsig] Kudos on Circuit Cellar Article

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Tue, 25 Apr 2000 08:23:43 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79864-2000.04.25-07.24.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I got my issue of Circuit Cellar Ink yesterday and the article on the T238
is in there ... great work guys ...

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

79. [wxsig] Re: Russ found a bug

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 25 Apr 2000 09:09:48 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79872-2000.04.25-08.10.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Russ,

Sorry no, I have not. I am down to one LCD display. I can send you the one
and order more, or I can order more and send you two. I made a mistake
ordering the number I did. Should have ordered more.

I'll try and get an order in today. Hope they are not sold out.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Russ Chadwick
> Sent: Tuesday, April 25, 2000 7:34 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: Russ found a bug

>
>
> William Beals wrote:
>
> > I am going to go ahead and publish the 1.08.1 release. Russ is getting
> > ready for a hamfest (and I think someone else is too) and this
> release has
> > the support for the 4 lines of the LCD, something that would be handy to
> > show off.
>
> Steve B.
>
> I've not received the 4 line LCD display module. Have you sent it?
>
> Russ
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] NO/NC Switch

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 25 Apr 2000 09:11:57 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79873-2000.04.25-08.12.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Received an updated Jameco catalog yesterday. I checked on the NO/NC switch
we are using. Alas, they are discontinuing the switch as the catalg says
700 left. Looks like we'll need to do a turn on the PCB and change the
front four switches to typical NO switches. Then buy up the lot of NO/NC
switches from Jameco and use them as the debug/reset switch on the T238.

Comments?

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] Re: NO/NC Switch

From: "Aaron" <ae4ko@amsat.org>
Date: Tue, 25 Apr 2000 09:16:57 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79874-2000.04.25-08.16.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Received an updated Jameco catalog yesterday. I checked on the NO/NC
> switch we are using. Alas, they are discontinuing the switch as the
> catalg says 700 left. Looks like we'll need to do a turn on the PCB
> and change the front four switches to typical NO switches. Then buy
> up the lot of NO/NC switches from Jameco and use them as the
> debug/reset switch on the T238.
>
> Comments?
>

I have one left! <HUGE Grin>

> - Steve
>
>
> ---
> You are currently subscribed to wxsig as: ae4ko@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

(Random Quote)
The earthling has stolen the space modulator!
  -- The Martian

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

82. [wxsig] Re: NO/NC Switch

From: "Aaron" <ae4ko@amsat.org>
Date: Tue, 25 Apr 2000 13:25:25 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79917-2000.04.25-12.24.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Received an updated Jameco catalog yesterday. I checked on the NO/NC switch
> we are using. Alas, they are discontinuing the switch as the catalg says
> 700 left. Looks like we'll need to do a turn on the PCB and change the
> front four switches to typical NO switches. Then buy up the lot of NO/NC
> switches from Jameco and use them as the debug/reset switch on the T238.
>
> Comments?
>
> - Steve
>

Looking at the digikey catalog, on page 445 (page 20 of 53 in the
section H pdf), there is a DPDT pushbutton listed that seems very
similar to the current switch. I found it while looking around for a
replacement. It looks like it's more expensive ($1.22 in singles --
ouch! -- I don't remember what the current one costs), but it does
have the advantage of having switch caps listed ($0.25 in singles).

EG1871-ND   Momentary DPDT PCB mount

There are square, round, and rectangular caps available in red,
black, and grey (sometimes light and dark grey -- depending on
shape)

EG1195-ND, EG1191-ND, EG1192-ND for red, black, and light grey
square caps.

73
Aaron

(Random Quote)
FOR SALE: Programming manuals. Must C to appreciate.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

83. [wxsig] Re: NO/NC Switch

From: "Brian B. Riley (KA2BQE)" <ka2bqe@amsat.org>
Date: Tue, 25 Apr 2000 18:50:48 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-79982-2000.04.25-17.53.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

on 4/25/00 9:16 AM, Aaron at ae4ko@amsat.org wrote:

>> Received an updated Jameco catalog yesterday. I checked on the NO/NC
>> switch we are using. Alas, they are discontinuing the switch as the
>> catalg says 700 left. Looks like we'll need to do a turn on the PCB
>> and change the front four switches to typical NO switches. Then buy
>> up the lot of NO/NC switches from Jameco and use them as the
>> debug/reset switch on the T238.
>>
>> Comments?
>>
>
> I have one left! <HUGE Grin>

QUICK! Where's the chair?

73 de brian, <mailto:ka2bqe@amsat.org>
--
Brian B. Riley, KA2BQE
APRS WideN-N Digi KA2BQE-3
=4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
<http://members.macconnect.com/~brianbr>
<http://www.wulfden.org>
For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

84. [wxsig] Re: NO/NC Switch

From: Russ Chadwick <kb0tvj@boulderneWS.infi.net>
Date: Tue, 25 Apr 2000 20:09:46 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80011-2000.04.25-21.14.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Steven R. Bible" wrote:

> Received an updated Jameco catalog yesterday. I checked on the NO/NC switch
> we are using. Alas, they are discontinuing the switch as the catalg says
> 700 left. Looks like we'll need to do a turn on the PCB and change the
> front four switches to typical NO switches. Then buy up the lot of NO/NC
> switches from Jameco and use them as the debug/reset switch on the T238.
>

That's too bad, I think that those switches have worked out real well.
Originally I was somewhat apprehensive about the small button area that contacts
your finger. But that has not been a problem. I have 9 of them left.

When we change the board, I think that we should label the buttons in a more
prominent way. I think that would help beginners. I know that when Will
changed the buttons around, I wished for better labeling while I was learning
the new arrangement.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

85. [wxsig] Circuit Cellar Article Reprints

From: Russ Chadwick <kb0tvj@boulderneWS.infi.net>
Date: Tue, 25 Apr 2000 20:22:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80013-2000.04.25-21.23.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve B.

I wanted to have reprints of the Circuit Cellar article to hand out at
the hamfest in Colorado Springs on May 6, but that was too short a time
for standard reprints. However, Rob Walker, the editor of Circuit
Cellar told me that they could print both sides of a 11.5 x17 sheet of
paper. They will print the 4 page article in such a way that the paper
can be folded to give 4 sides for the article. This is not too
expensive and so I ordered 300 for mine and Will's use. We could give
you some that you could distribute at the Dayton convention. But, if
you want a lot of them, let me know and I'll increase the order.

Rob also offered entire copies of the magazine for $2 a piece.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

86. [wxsig] RE: Circuit Cellar Article Reprints

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 25 Apr 2000 22:29:29 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80014-2000.04.25-21.30.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yowza! How about you tell Rob that we are going to the biggest amateur
radio convention of the year (need to plug the attendance figure, take a
look at http://www.hamvention.org). That hams are made up of technical
people, many of whom are engaged in the electronics industry. That this is
a great place to advertise Circuit Cellar magazine. That they give us a box
or two of the magazine to hand out or reprints of the artcile with an
advertisement to subscribe to Circuit Cellar.

Get him turned around, he's forgetting who feeds him :-) He should be giving
you the stuff.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Russ Chadwick
> Sent: Tuesday, April 25, 2000 10:23 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Circuit Cellar Article Reprints
>
>
> Steve B.
>
> I wanted to have reprints of the Circuit Cellar article to hand out at
> the hamfest in Colorado Springs on May 6, but that was too short a time
> for standard reprints. However, Rob Walker, the editor of Circuit
> Cellar told me that they could print both sides of a 11.5 x17 sheet of
> paper. They will print the 4 page article in such a way that the paper
> can be folded to give 4 sides for the article. This is not too
> expensive and so I ordered 300 for mine and Will's use. We could give
> you some that you could distribute at the Dayton convention. But, if
> you want a lot of them, let me know and I'll increase the order.
>
> Rob also offered entire copies of the magazine for $2 a piece.
>
> Russ
> kb0tvj
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

87. [wxsig] Happin' events

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 25 Apr 2000 21:51:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80031-2000.04.25-22.54.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

All: If the CCI article is out, I hope we are going to get a lot of
queries about the board. I think this is going to put a lot of pressure to
get the board spin done quickly. Looks like we need to add switches to the
list. I'll declare myself open to anything as long as we pick it quick. I
received 12 of the switches a while back for "evaluation". Since the kits
also came with switches, I still have 11 left that I can return.

All: Got an email through Russ from Bob Bruninga reminding us that the
"correct" way to send weather data should include a postion string. I took
his suggestion "under advice" a while back, but havn't acted on it yet. It
is on my to do list about four items down. Its use will be optional in

order to satisfy both sides of that battle.

All: Two minor bugs in the 1.08.1 firmware release from yesterday. The
24-hour gust value is just a copy of the 5-minute gust. If you don't have
a rain guage installed, the rain guage error counter continuously
increments.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

88. [wxsig] RE: Kudos on Circuit Cellar Article

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 25 Apr 2000 20:59:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80032-2000.04.25-22.55.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

AAAGH!!! I thought we had another month to go in order to get boards ready
for the queries that (we hope) it will generate. Oh well. It is nice to
be published. Hopefully I'll at least get the current issue if I sent in
my subscription request a week ago.

will

-----Original Message-----
From: Brian B. Riley (KA2BQE) [SMTP:ka2bqe@amsat.org]
Sent: Tuesday, April 25, 2000 6:24 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Kudos on Circuit Cellar Article

I got my issue of Circuit Cellar Ink yesterday and the article on the T238
is in there ... great work guys ...

  73 de brian, <mailto:ka2bqe@amsat.org>
--
   Brian B. Riley, KA2BQE
   APRS WideN-N Digi KA2BQE-3
     =4431.73NN07251.55W#PHG5766/Underhill Ctr, VT
  <http://members.macconnect.com/~brianbr>
  <http://www.wulfden.org>
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@L$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, ,````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
```

```
M``,`_U\``````@'V#P$````$`````````V-D`02 `0`L````4D4Z(%MW>'-I
M9UT@2W5D;W,@;VX@0VER8W5I="!#96QL87(@07)T:6-L90!(#P$%@ ,`#@``
M`- '! `9`!0`.P`6``(`6P$!(( #``X```#0!P0`&0`4`#L`%@`"``%L!`0F
M`0`A````-C(X03A%1D%%-S%!1#0Q,4$X-38P,# P13@Y0C-#,#D`* <!`Y &
M`&@'```A````"P`"```$````+`",```````,`)@`````"P`I```````#`"X`
M``````,`-@``````0 `Y`."1<6PKK[\!'@!P``$````L````4D4Z(%MW>'-I
M9UT@2W5D;W,@;VX@0VER8W5I="!#96QL87(@07)T:6-L90`"`7$``0```!8`
M```!OZ\K2UCZCHIC&N<1U*A6``#HFSP)```>`!X,`0````4```!33510````
M`!X`'PP!````%P```'=M8F5A;'- 8V]M<'5S97)V92YC;VT```,`!A"GC51M
M`P``$"L#```>``@0`0```&4```!!3$PZ04%!1TA)5$A/54=(5%=%2$%$04Y/
M5$A%4DU/3E1(5$]'3TE.3U)$15)43T=%5$)/05)$4U)%04191D]25$A%455%
M4DE%4U1(050H5T5(3U!%*4E45TE,3$=%3D52051%``````(!"1 !````-P0`
M`#,$```V!@``3%I&=2 (QQ$#``H`<F-P9S$R-18R`/@+8&X.$# S,YT!]R "
MI /C`@!C: K X'-E=# @!Q,"@P!0H1!V<')Q,A%V?0J V0C((#L);PXP-0*
M"H$L=6,`4 L#8P!!=6P:;@(@90NF$7!L;#H7"J(*A J 01C 1T@A@1D0("!)
M('1H"&!$9V@%0'=E(!$`9-H@``!O&8 $D" $8 (P8F@9<&\@9QM@"X @[P6P
M!($;0Q% ( ;@"Q$$(',)<!I >2 "$!PA&K @7G$*4 B!!" 9@&$%0"CA&@)O
M<&4I&Z 9X0,0EP,@'' 7$'(>H&4N&4#>3QLP&@`7T"!Q205 ! !:( ,`8QH0
M&U%B&A!PKG4"8 0`&K!D('%('R'*9A;0;!U@22<?P1ZANFP=,',%0!QR'<)C
M"'"W"7 ","%A<PI0&Z!F&5&W$3 E8@.@;1U@);!B!/1>:0(@'1$>`21A81GQ
M9?9K&F ;@"X8"A^B& H*]/DB@#,V`4 6D % $L :D(4%D'02!#$V("TLLGI/
M!1!G"X '0 70!Y!S_2BP92RS& 8KQ"N1"Q,KQF!I+3$T- % (H Q'#@P`4 ,
MT#!38B!&UP-A%_ ,DF(18$('(0.@*D(@<%(#$&4=8"A+($$R0E%%'U!;4P!-
M5% Z:V$R8B!Q94!A;2W ="[Y!;!G71@%,8 &8 (P,>?"5"?Q9&%Y+!%P$L ?
M`Q$.,#<P`= PX" V.I0R-!%P335G5&\V.,!!4%(@5U@&`!\POF,',1E0`C $
MD"@"1P-@;'5P-6@B8&HK\3'G6PQW> "0-4 @2W5DQF\$(">10VER)1 ?<=Y#
M(.$*P0<0)W!C)# N7_\O:BL4"[88$PKC"H 98!N ]P5 )L$EE&\F`#Y].O H
MD/YY* $$D#<!&F$:4!W""L"'/X,^,AW"5#(S.!@$[R%Q&[$:HAH0+DD`&W =
M(<<9X06P*)!G=7D$($D!XQ@*&4 W,R !`!R@,H+=-S \%H4:X MP;!M0-$_S
M*V,6U" ^& 0LL$+5&4 _,FTW,#-T3X<Z`07P5VG!`0!.+4X@1"TA404L+3-/
MAQE /3!@,S&B+DM03DXP`< U5) !%9!7(U!(1S4WL#8V+U5&0 20:!^RR$-T
M<C<P5E1*UDPGP1G0=' Z+R\'@ ;0V020<RX`P06@;A<0+ #B+@6@;2]^2[-+
ML$XORU=O6'%W7. N=Q;0!7$6;DWO2M9&!;%01U!?/= S, 0@3!]:)4!=*3_3
M)O$\DCU'$4 E`=!?8;]B\5^A7=\J.AA&+B=9"&#_1J$D]R.!)O4B($91&V ]
M<SD:8',Z&?!8P0= <T#G6=$B4!$P<G8@8%G1& 3Y.4 @=0" 9\8F,AI1'*!_
M#P$HD%BP3,$;0B0Q:C M3SUS,$!5P%3P34 B@72_60`!D!+ 79,8&1.!``!0
M``,`$! ``````P`1$ `````#`( 0_____T `!S" AS<J*Z^_`4 `"##@D7%L
M*Z^_`0L``( (( 8``````, `````!&``````.%`````````P`"@ @@!@``
M````P ```````$8`````$(4````````#``6 "" &``````# ````````1@``
M``!2A0``MPT```,`"8 (( 8``````, `````!&``````&%````````'@`B
M@ @@!@``````P ```````$8`````5(4```$````$`````."XP``L`)H (( 8`
M``````, `````!&``````Z%`````````P`G@ @@!@``````P ```````$8`
M````$84````````#`"F "" &``````# ````````1@`````8A0```````!X`
M.( (( 8``````, `````!&`````#:%```!`````0`````````>`#F "" &
M``````# ````````1@`````WA0```0````$`````````'@`Z@ @@!@``````
MP ```````$8`````.(4```$````!`````````!X`/0`!````!0```%)%.B `
-`````P`--/TW``"3OH4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

89. [wxsig] Article reprints

From: Russ Chadwick <kb0tvj@boulderneWS.infi.net>
Date: Wed, 26 Apr 2000 23:17:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80232-2000.04.27-00.19.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve,

I wrote and told Rob Walker of Circuit Cellar about Hamvention and said
that you would be anxious to distribute reprints or boxes of the
magazine to attendees. He said...

I can handle the
> smaller requests, but something along the lines of a couple boxes of
> issues
> would have to go through the Associate Publisher, Sue Skolnick
> (mailto:sue.skolnick@circuitcellar.com) who handles all of the
> show/promotional issues. He can get in touch with her for more info or

> to
> work out something.
>

I will have some reprints, but you should contact Sue for magazines.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

90. [wxsig] Dayton Hamvention

From: "Steven R. Bible" <srbible@gate.net>
Date: Thu, 27 Apr 2000 10:44:57 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "William Beals" <wmbeals@compuserve.com>, <wxsig@lists.tapr.org>,
<tapr-board@lists.tapr.org>,
"Russ Chadwick" <kb0tvj@boulderneWS.infi.net>
Message-ID: <LYR15067-80286-2000.04.27-09.46.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dear Sue,

Hello, my name is Steven Bible and I am a board member of the non-profit research and development group TAPR, Inc. (http://www.tapr.org). Rob Walker pointed us in your direction.

We develop kits for amateur radio enthusiasts ranging from digital communications to GPS. Several of your writers have mentioned our group in their writings.

I am writing to you to tell you about an opportunity to advertise Circuit Cellar to the amateur radio community. On May 19-21 in Dayton, OH is the Hamvention (http://www.hamvention.org), the largest amateur radio convention of the year.

In the May 2000 issue of Circuit Cellar, there is an article by William Beals on a design he did that won 2nd Place in a recent design contest for the Motorola MC68HC908 microcontroller. Will interfaced a Dallas Semiconductor 1-Wire Weather station through his design to interface to amateur packet radio. TAPR is finishing the beta testing of a kit we will be offering soon.

What I would like to propose is that TAPR hand out during the Dayton Hamvention either article reprints of Will's article along with subscription advertising to Circuit Cellar and/or handing out the May 2000 issue of Circuit Cellar magazine.

TAPR's involvement is that we would like people to know about the new kit we will be selling. And since our activities closely parallel those in Circuit Cellar, there would be a great target audience to promote Circuit Cellar magazine.

If you have any questions I would be glad to answer them. I can be reach via email at n7hpr@tapr.org or buy telephone at 912-882-1325.

Thank you,

Steven Bible

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

91. [wxsig] Board updates

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 29 Apr 2000 13:04:14 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80669-2000.04.29-13.59.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Brian: Given the CCI articles earlier-than-expected release, a board spin is pretty urgent. I think we covered all the highlights a week or so ago. I don't have the ability to edit your schematic, but hopefully the description below will be good enough input.

1) Change the symbol for SW5 from a single-pole normally closed resistor to
a single-pole double-throw switch. The common   contact should be
connected to +5V. The normally closed contact will is still be connected
to the 6808. The normally open contact needs to be connected to a 10-ohm
resistor with the other side of the resistor connected to ground.

2) Change the bottom connection of V1 from ground to -9V. -9V is available
from the negative side of C11 near the MAX chip. This is clearly best done
with an on-sheet connector like you did on VPP.

3) (the biggie) Can you add a 1x14 header to the board? Ideally without
removing the 2x7 header. This is a nasty! As best I can suggest, about
the only place such a header could go would be to the bottom of the board
in line with the switches. If this is impossible (entirely possible), the
backup plans are an adapter or cable assembly. I think I may have found a
cable assembly that may not be too bad for about $1.00.

4) With 700 of the existing switches available from Jameco, I am suggesting
we stick with those. I'll help find some more if we are met with wild
success and need more than 100 kits.

5) Better (bolder) labling of the four switches.

6) Naming the functions of the three DE-9 connectors. J5=TNC, J4=Computer,
J3=Debug.

7) A request to embolden the silkscreen for the heatsink side of the 7805
to make the polarity of the device more obvious.

I think that is it. I am hoping that all of the the requests except for #3
are fairly easy.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

92. [wxsig] Re: Board updates

From: John Koster <w9ddd@tapr.org>
Date: Sat, 29 Apr 2000 14:47:07 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80674-2000.04.29-14.48.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I assume to ment to address me, and not Brian?

With regards to #3 (1x14 connector), I've been meaning to post a question
to the list (or check a catalog), but have done neither.

So here is the question:

Are pre-assembled cables made with the 1x14 connector on both ends
available? I just don't remember seeing them around. Personally I'd much
rather have to only make up one end of a cable rather than two ends, even
if it means the minor confusion of the 2x7 on one end and 1x14 on the
other.

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

93. [wxsig] LCD cable

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 29 Apr 2000 15:54:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80690-2000.04.29-16.49.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

Sorry, I meant you John!

You bring up a good point, I have seen such cables, but they have almost always intended to be soldered, not connectored and are usually flat cables with flimsy foil sandwidched between layers of plastic. The website http://www.eio.com has some 99 cent cables that look pretty good. I was thinking they would be a good backup, but based on your suggestion, maybe we ought to stick with the 2x7 and use the cable they offer as our primary solution.

(I went back to that site a few minutes ago to get a picture of the cable to post it in this email, but the site appears temporarily down).

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

94. [wxsig] Firmware status

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 29 Apr 2000 15:54:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80691-2000.04.29-16.49.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

There are a few other display bugs I've found in the 1.08.1 release.
That's what I get for completely re-swizzling the entire display code!
Here is the list of bugs plus changes so far.

1) For yesterdays stats, I have high and low temperatures swapped.
2) The 24-hour gust speed entry is duplicating the 5-minute gust speed
3) Monthly rain is rain-since-last-cal on initial power-up.
4) Rain totals currently cannot exceed 9.99"
5) I've coded up and am debugging the APRS 'r' (rain past hour) format.

For the rain stuff. Here in Colorado, 9.99 inches is enough to cover about a years worth of rain. I suspect this is not the case in Florida. The APRS formats can't handle anything greater than 9.99 inches, but then the longest period they cover is 24 hours so I assume this is OK (even in Florida). The two places I intend to support amounts greater than 9.99 inches will be for the monthly stats and for the user-settable stat. Does anyone have information that suggests I'm heading the wrong direction here?

Second rain question. For the rain-past-hour I am currently consuming 24 bytes of RAM because I'm storing the entire 16-bit rain counter each five minutes. I could get away with only one byte per interval if I knew that 2.55 inches of rain in one hour was essentially impossible. Is it? (at 16-bits I am REALLY sure that 655.35 inches of rain in one hour is pretty unlikely!!!)

will

This message sent using 100% recycled Electrons

(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

95. [wxsig] Re: LCD cable

From: John Koster <w9ddd@tapr.org>
Date: Sat, 29 Apr 2000 18:14:30 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80698-2000.04.29-18.15.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, before we beat this into the ground, let me see how hard it's going
to be to add the connector. If it isn't a problem to add, then it becomes
a "don't care" as far as the board cost is concerned.

John Koster, W9DDD
<w9ddd@tapr.org>

On Sat, 29 Apr 2000, William Beals wrote:

> John:
>
> Sorry, I meant you John!
>
> You bring up a good point, I have seen such cables, but they have
> almost always intended to be soldered, not connectored and are usually
> flat cables with flimsy foil sandwidched between layers of plastic.
> The website http://www.eio.com has some 99 cent cables that look
> pretty good. I was thinking they would be a good backup, but based on
> your suggestion, maybe we ought to stick with the 2x7 and use the
> cable they offer as our primary solution.
>
> (I went back to that site a few minutes ago to get a picture of the cable
> to post it in this email, but the site appears temporarily down).
>
> will
>
> ---
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> ---
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

96. [wxsig] On the search engines??!!

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 29 Apr 2000 17:44:05 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80699-2000.04.29-18.38.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

For fun I was poking around on Altavista looking for barometric pressure transducers. My search critereon were "1-wire" and "barometric". Much to my surprize, of th 19 listings, our website (compuserve) showed up!!

I thought you had to submit your site to these search engines before you showed up on them. I had never figured out how to do that, so I hadn't done it yet.

Oh well, guess we're getting more official.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

97. [wxsig] Re: Firmware status

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sat, 29 Apr 2000 20:05:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80707-2000.04.29-19.06.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 29 Apr 2000, at 15:54, William Beals wrote:

> For the rain stuff. Here in Colorado, 9.99 inches is enough to cover about
> a years worth of rain. I suspect this is not the case in Florida. The
> APRS formats can't handle anything greater than 9.99 inches, but then the
> longest period they cover is 24 hours so I assume this is OK (even in
> Florida). The two places I intend to support amounts greater than 9.99
> inches will be for the monthly stats and for the user-settable stat. Does
> anyone have information that suggests I'm heading the wrong direction here?

The only time this could get into problem territory is during tropical activity. I seem to remember some forecasts last year of 10-15 inches over a fairly short (as in a day) time period. I seem to remember North Carolina getting a _lot_ of rain during the hurricane(s).

> Second rain question. For the rain-past-hour I am currently consuming 24
> bytes of RAM because I'm storing the entire 16-bit rain counter each five
> minutes. I could get away with only one byte per interval if I knew that
> 2.55 inches of rain in one hour was essentially impossible. Is it? (at
> 16-bits I am REALLY sure that 655.35 inches of rain in one hour is pretty
> unlikely!!!)
>

Again, during tropical activity, I bet it could exceed that. I don't have good numbers to give you a better idea, though. Hopefully someone else would help with some idea of the numbers. Perhaps Steve and Steve? Between the three of us, I think we have a good idea of Florida weather...

> will
>

Aaron
Orlando, FL

Random Quote:

Concerto (n): a fight between a piano and a pianist.

```
---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

98. [wxsig] New TNC mode

```
From: William Beals <wmbeals@compuserve.com>
Date: Sat, 29 Apr 2000 18:43:06 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80720-2000.04.29-19.40.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Brian (really!):

Have you had a chance to check out the TNC mode that is for the second UART on the KPC3+ yet?

will

```
------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

99. [wxsig] eio.com cable

```
From: William Beals <wmbeals@compuserve.com>
Date: Sun, 30 Apr 2000 08:03:46 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80790-2000.04.30-08.58.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Folks:

eio.com was back up this morning. Here is a (very small) GIF of the cable
they had for 99 cents. It appears the wires are color-coded, so getting
the users to install them on the back of the LCD may not be too bad.

will

```
------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293


begin 600 99cable.gif
M1TE&.#EA>0!G`/?_`/___P@("! 0$!@8&"DI*3$Q,3DY.5)24I24E*VMK;6U
MM;V]O<;&QL:]O=[.SL:UM7MK:ZV,C"DA(7-:6J524IQS:XQK8RD(`(1*.80I
M$%(8",:MI=ZMG%(Y,6LY*9Q2.<:<C+5S6EHQ(<:,<Z5K4LZ]M8Q[<UI*0O_.
MM8QK6K6$:^>4:T(A$!@(`/>MA+V$8[5K0JV4A)1[:W-:2L:4<W-*,4(I&(1C
M2G-"&,Z]K:V<C+VUK9R4C'-K8[VMG)R,>[VEC'MK6JV4>Z6,<^>]E*5[4H1:
M,=:UC)Q[4GM:,81K2I1K*<ZE6L:<4IR,:]:U<_?OWJVEE-:]A+642M;.M=[.
MG._>G,:M4N?6<][.8U)*$/_WM=;6SIR<E#DY(5)2*8242CE2`(R<:UIC2E)K
M,8R<>VM[6D):*1@I")REE(RM>U)S0C%2(6N46E)[2N?OY_?_]][GWK6]M82,
MA+7&M7.$<R$I(7.<<T)C0F.<8RE2*3%C,0`Q"%J$8QA"(5JE:S%[0IR]I8RE
ME$IC4AAK,3F$4@!*&#F46J7.M8RUG#%S2@@Q&'NEC !2(4JM<REC0B&$2B&4
M4AA[0A!S.0AK,0A[.7.]E$*<:Q"42EJUA!",2L;6SHR<E(RMG$IK6ISOQEJ,
M<SF,8REK2@@8$"F<8Q!"*0A:,7N,A%IK8Y2UI3E:2GO6K4*,:SFU>QAS2AB]
M<UJ4>UJEA!BM:Z7.O4J,<RE".7O&K9RUK;76SDIK8[WGWI3>SK7>UI2]M1A2
M2L;.SIREI6MS<\[>WK7&QE):6DI24CE"0BDQ,9R]O2E"0A@I*4JEK93&SCE[
MC'NMO:W6YS%C>Z6UO6M[A$I:8W.MSD)C>SECA$)[K8R4G(2,E$I26BDQ.6NU
```

```
M_QA2C'-[A!A"<W.$G(REQH24K0`0*6-[I0`84BDQ2EICC)R<I4I*4GM[C+6M
MSM;.WKV4QJU[M;6MM=:MUN>MYY1KE,:,O??.[ZUCE%)"2G,Q4KV$G&LY2JUS
MA'-26GLA*8P($ ```,# P"'Y! $``/\`+ ````!Y`&<`0 C_`/\)'$BPH,&#
M"!,J_-= #K"%$"-*G$BQXL0&.P1&"3+@'X@/_,9X(GBBH\ %4ZI87,FRI4N"
M0,JD\6# AHE\,?PL6]=A(!(L!#7P>$FTJ%&"48#X`V #A0U[U_S]VX'D'XL%
M1[-J?=G!CH 6=B:@LZ,L`! -6].J17C*CP`[I4HI6S0J@("[HP0,$%!@@(VU
M@%LFN".)DBE3OAAY2Z=LE#1UR5!-4Y8NW8!CQ(H%*\6'#Z@?J!CA"DR:(+!'
ME!H1(C2)%J,#RHZEV[;-F+)MVCJIVJ,G&9[=AQOQ:60I6NGC! -5HE2'C9<Z
M`7ZI:K2'49]1VH@I,Q9,F[HNQ>:<_S+$)Q8#Y.A;-C@$"Q<M2I(^W4I/_Q^H
M2O@C"9+VOI$I/H:0UXAPB_#FAQZ*4")+*&EP$HLFF,!7"2:50"@)A9'(@@DF
MKQR"R!QED-)('H1@T@I6+P'3PPTA?(!## [$D<TH$N!C0@\GH&A1'8TPDL@"
MI4A2B!N)H&* -L4($PPJV*""BC;9$3,-.K^@LD@DDIB"" _&J&)/,;],$XPW
M3Z:S)'=Q"%/*'VN0,<HB)Q30A4 &V)-.`<;49HPYVQ"3!A<`;#+G0'/LXPX\
M\<3CSCT7:(/0`@JPQ,!]D5!222&L3.*?+L"\D\TPR'@####1B+,)`JH9LMPD
MAD12B2%OP/_!Q2]I"A/'+['&`4 I?;#A1A^&K+$&(9K,4MHP##2PP"9O"-1
M`CR<<$(')^0P1'T3E9# 0"I<0 L=_VQ@PQ@'S3 4MNA"-,,%,D#!P@E&7$"/
M/6K\X\TS]O@@D!Q-Z#A0`\.D*S!!"7#A3QPM7 !'"R5X$<HH<ORCPQ0"07##
MP!@K5(,7!DS @S_FC)/ $C>DD?')!2T0B#]["3!*RP(<HXP$[Z!,GQN:&&9*
M(Z$(@LJ7QZARBB=\L.&''6CXXT\`J)02RD,V'V4"'H9,LK,I@ZQ1M1Z&^$*J
M`:@$XX\RQ 3#W2]R\.#)*'H$XF_4%0ER""2I$?*(&2<<XX\JQAC_0PPJTAA#
M@#''V/&W-N@(PL,CIACB2AWGPJV6`GT`R(4"BX@S#1^FC '@*74\PH<EOTAN
M^NE=R"!"#0,I\#9$<Q#261MB(%*+'GJ,XD4PJJA2S#33%$/,(,4,T@<CI;3Q
MA-:1Q% $&GQ(0^:8V02SI#IS!(--,GZTL4:$IM#500$U_U. /084D QM!6QC
MQQ <C&!NV<%L\( @/?! !0``_*).,%TP&4$8P(Y$18 'P4#'1 ;1B$Z\(P&U
MH$0>JC,&L!'C`,5 TC2<) T#; ,5PP" *LQ AC6PP1*,X-@$B'%!#$+ &_]+
M1CJD<:M%W$$,7^##,<:WK7\<HV\_E$PZ_XQ1@&F0PQK-H$8VT+&(<2@M`.,8
M@!3],( `M$ `+&A!"P;@!7OT``)=:,! 4"0'.0SJ=&A,8T$>4(-A[* $KU,C
MNAHP@R@() 0N,$ G!A(!?T!-(%U0@AQ+8P(@_(,.5!A#"S@``Q;,0QO@^D<$
MKN&%@2@!*(-$#A+2`( +3 `#%VC'!!CQ"W+,P0(#F8(3"C*$R&5R*R;P@0A^
MX(466* %]+#!)SIPL7\(@6("\4 O7PD8.<#!'W6@0PN@T()]$* 4=?@'$+0P
M%1$0,ST]:($.3L"!"WRC&ZA(`!:<\(-KTJ<#'NA #WY@`0&,PP`T2$(/S7D<
M&^BE9609AS(&D/\">@:&!V=01BE,,8J\W$6*52P`*KP0,7\:I0Z2J,2 ^. /
M.R2CH'G!J$$#4 `"8,.A+-F!(I8S(%/0HA.6&=PQ/H@*]QFC#J+@0S#8$8P]
MK,$-?(#$*NP(TH3,P1&:B(0A5#.$&7B!#Z>80T7S5(#VK?1)WE ``1@1C.'
M(A@]34@H2N$'0AS&-3TH`-BBX8L!^6<0;#C%+:0Q!G_0X19=,$,`]+")AF:U
M( F(A6H@T8A'7/5.=C &F:8A#6UT9QO',, TD-$'52RB1S;H`2+F>5>!*$ 2
MK:B$)!H!"$#X`1:CX$,BYD `5!!@$?8PA@>/80_)&*\.V>N,+0)6V8C_W&$2
MCZC#&'B1@%$8XA%]6,,H;H&+173F%'$5CB6X4%NB".(1C? $'FXZ"%,4`A=S
M:"YITK *1&2R"S= PA'$.)$%W$(."TBOCA: 7O6ZM[WN76\<,;:#"9P``QG(
M``<`X) %T ,%+E@!@$&@@Q]$2B%SP$2 #*$&-I!GJ):JQ"0L-8E)X(<2%M;$
M9AOAAZ$^(A* @(2%X2-B34Q(.(3XK2'\X FN]4$/I3 $*2)9D1D@X0,96((3
M-A"'81Q@:2=P`/_X]P8ZT $.N7H#%Z*P`RK,=R!E:(0:B%&9.#1"%+B0ACT.
M@*3L""^#8$['']!+@A4=@8A*$N ,$:G&,:6C#_QCV4$4Z[#3$9-1"%6GHA!ZP
M)#L[V, 8"!!(`0[@0=IL(QF"0\<.3/! '43@#?S[13"(X2]@=*$"#]@$/(*Q
M#QFX)'2S_44R%/&'11AB$'[3AC?0D0U4J ,;ZC!&,9ZD-&#@] ]\0 0"#&",
M#0+C%-7#!K#%@8IDP$(8#5#-&O# !S]P3( &2$<'/&@,1-L#3\-8@ G0T8YY
MR.,<P1"'.*)QCG6(XQOD>,8S>@$+6F3"$9>@!2D\<8 ["((3B0`&>@5R'H04
MHA%N6 ,:]N"'/!BB<:58T@91P4*&_^UOR(B#,=208C&HX13 , "5T]%E* F/
M&*K^A0^(,0M@U&$-$O^8@!<&90<#'$ "B#V&S)51#!XXP <S,($05#""$:B
M!C1 0A"&4 4K1$$&8!!##"+P`Q-$00%S",(,EM"$*4@A![15R XR<8D[T($+
M91#(#A+QAT.4O0^'.,0ETI[V4*0]$H%H:!T.$0E20*(2AW!#'O;N/;W?H42]
M$ @='&$(2-RA$K*PA7877]L8G. ?3V9\5K1@A@7XP E F*^!)5^1!$#@`1H)
M@19B,1 6H,$@)N@)YRL2@QE@!0;]H, CR/L/'[2 ]CO8`NA7#Q$E9/<?-#B!
M/WZPA0OH8QJ"& @$RC'/)*B$]Q%1@! <T ,`W, ?W:R'.PP@D'L)X, ZR +_
M]"DR!"]0P0<:L, %Y$$//S D'*CX_3^F4((U#G/\!HE!&6P/`1;88!Y?``K.
MP!,#X01-0! Z8 3XIQ Y8 8S8$\WT 'X@ 2D\ Q_(1 Q<( :@18+R( =8 (R
MX ]#0"TJL >7P ("`00:^ \B<& =F!!4T ,L``#^0 ,W8 `6`!?;DH "P0+Z
M\H(+\0-0X ]P( $CL (", VCP'T\V ']!(01,00V8 `-8 (HX _<(#([\ 0[
MH'I0*!$U< )C, 88( #?L WOP 1)\(-?&!$RD$[%4 4B, [C\ -(D 09T880
M<0(M0 `2, ,&L /&( #^( 4XL'MZJ! V($4N4P!\_Z$,RM !GI:("[%%>G%0
M9#$`!> %\D>)!,$#@& +2R-%+R-%`1!8!>""GE@'IY4,HF-0+G-/`N"'$M!O
M>K@`HA )A< &:# `B]!$?%!0=G$7=^&'E=2&:5 (R_&+X\ (T[ -Q9 +G,$'
M+1 `2Q,`>9$G&P"%IP`)KA <IM )P>"(VV /*S4`Q' *IN '>. 'M? (!D U
ML: &;K!'T-<'KH!AIE *K, ($$ `=H 94-(=3D(`'-5JCZ !>, )@^ /K( +
MD9=5"Z *?/ (HF *GE4*JB !_M W?1(XRF `QS `PK,/IC('?, (V' !8Q"1
M/24'9B *$F8(>P`(M: (9O_P!8$0#"=0!X-H`*MU`"PD#L. #75P5&T`*:L'
M#'B0#*5 "(T`"9+P" =@!J70")0`77R@"-' .S[)'50B;'J !GW ``DH>8)P
MD8TP4*(`"R"96I@1#:C@!W[@!F1 !HMP"JG0&8P`#'O@#Z P#)2U>'= "7R@
M!U93")S04@10`%0&-.BC#*AP"Z)0"E23DJ= D:3P"RX)4J40`(S@"IK2,XQI
M#.^@#6)R)ZB@"K>Q#W^C#+_%![.0#5Y0`ZJH73QP")J@":I!'6:@!_Y0"ZC@
M#ZSU0[21)Y&A#>E@E,' "(7 !ZR@"YWI4'<@##MP"?[1!V> !]F #8:@"B57
M)_;_X ]XPAWV``&G``'BP6RT( P=N ">\ B&T ?#( Z*0 "U``AK`!>XL"3#
M60!4, >HP G,)@JZ8(M V 6BDPC,E@K9`"!NT :XHPBB`%U$XPJXD'64V >/
M4 J>\ OH<&=FP >4``FYH !U,!J>>!"=, @!P@:-4 FS< >Q< `K&A'-<B&V
M8(]RU(6H=*,0T04<@ *W":0$H0"H8 ,7< %0P 5U@ 8\4'^=9PFD@ F:T JI
M,!"94 GY^ B$``E2.21E\ -@H AJH >K,!#)*"2'H B'4 AO&@ET5PB 0*>%
MD'P"T0=[< =NH :9$ A'P0-#0 (?8 0?H (,D TV4 /$_V !_( !=0`!0K #
M#Z LM/<HB> JKP(?F4 (\&$*.G,8HKHS&-8(FF *FD *E@"5&%9AE, :K2H)
MFD((5YD(5@`'6Q &GC!4E[ )+I$`,C #'_ !2U !/A '[( *`7 "R1((5/ L
```

```
M_\ `KX.@!S$'Q*$&:] 9>R &8@`&:P`+H. )J `+=< *L `+?6"NH4 (>V (
M&^ &AI '0I!#K$ +L! *A= 'F!(*M! +_.H'UB@)D2!4B^ 'R= (6?H/<Z .
M"# ')C '$ NQ\Q0#(' $^J !&! %]( .9M,#@@`'_ ,'N. )/, `HZ(`<J `
MP, #PA ("K !V[@0<V *H- 'V/^@![-PE9RA#,E0`#)7"VQV# 7 9MM0"XM
M!F8`"'@G!6"P!P'@!:J56GV#:'-F# > !VUP!GM0"8>Q""U7``*4# = :+4!
ME.80B2: #=.@#K_ ``\0!1$`!?PS#.9@`"90$.\0!?- #_& #M12/A1AK7TP
M"(I0#*6P"(JPF'PS``SW9AG4<!N$# `P#:;@*HTP"ZG@"<5P)\#C9DY"#!Q+
M#'/ /XUP"$& !HLP`!W0`0+4-^,CM7ER#/I0`CSP"S$2*.I)$._0=/,`#_0`
M#QU `(%&%'5@F)W!66NP!["0"\*9#NH0-N @#4N2':A)!PX0!(M -WQ@"YQ0
M;4X"#&+_TFJH.0W$8 _9``!J(@9:\ 6]: \2,+R..082T#=Y8@P#( ?*,A#
M<)Z(X@#R8 +V$ #*X O-0 [AP [8H SF0 [4P S"``?321!F<&J&4P"28)=T
M0 Q@4PR;:PS*"4/JP$+$H LBY =J0 9"0 >"< +<(1D<G ZH< K_,PUF@F2^
MD =@< 8L,X70E@XG0 #F4!EQM@W9X [MT [G< [5$ S.0 [O`#PN4PNL$ F7
M0' 498W^H$5*XP^+H =B4 9_8 FG8%<',0:$X F#( A=+ 9G\ F=8 ]TI@T'
M4!E=<B>X@0MO0 P=%@-:@+D'T&LLQ,%49@R5<1O>``!O0)=K_V &_J 'BP@U
M?0.4YY,.,G0,U= ,UF .K 7'0X18][07$M !$.!*!X$145 $10`!G)D0@T W
M@) '8G"\,=H(@1 -O2 -V- +G) -C. ,?5D``!(#_C @:H &`9((9ED".T '
M"3 J=! -!2,Z%4D(H@`*0; 'WY@($K$`)= `)9 #/@`"0E !*O "+Z /(\ !
M1( "5@`%6_#.6[ !J- #\_L%TQ99/ `,$;D!:1 )F/ )F; *@< %C$ )A@`(
MC_ ("/T;;J (J@`(>+ '%H8)JY *B$ *KV(*.(D'!; 'XV,`JH 'QE ++@H'
:55 "4' &W1H&F1#!I;$!Y62D,HT<`0$!`#L*
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

100. [wxsig] 1.08.2 release posted

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 30 Apr 2000 12:11:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80839-2000.04.30-13.16.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

The above release fixes several display bugs, adds the APRS 'r' format, and tries to document how to get your 1-Wire IDs from a memory dump and put them in the source code. The release is posted on the website.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

101. [wxsig] CCI article error

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 30 Apr 2000 12:15:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80840-2000.04.30-13.18.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

The CCI article had an error in it. The website address for the weather station was mistyped and neither Russ nor I caught it. OOPS! An enterprising soul managed to find the correct address and let me know yesterday.

Steve: Since the TAPR web address is listed (and correct), is there a chance to have the correct compuserve address listed there somewhere or is it policy to not list a kit until it is available.

Russ: Would you like me to Email CCI and ask if they can print a

correction?

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

102. [wxsig] RE: CCI article error

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 30 Apr 2000 15:04:38 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80846-2000.04.30-14.06.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Steve: Since the TAPR web address is listed (and correct), is there a
> chance to have the correct compuserve address listed there
> somewhere or is
> it policy to not list a kit until it is available.

Greg is working on the web page. We normally have a page up. Especially
now with the CCI article.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

103. [wxsig] Re: eio.com cable

From: John Koster <w9ddd@tapr.org>
Date: Sun, 30 Apr 2000 14:07:51 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80847-2000.04.30-14.09.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Since PINE and EUDORA both refused to have anything to do with your
attachement, I went looking on the site. Is it the one they have marked
as temporarily unavailable? With the text splashed over the picture, it's
difficult to see the details.

If that isn't the one, could you post the URL?

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

104. [wxsig] RE: CCI article error

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 30 Apr 2000 15:19:25 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80874-2000.04.30-16.45.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve:

Great, thanks. At least there is a backup to our error. Good thing I'm not trying to make a living as
a proof-reader!

will

-----Original Message-----
From: Steven R. Bible [SMTP:srbible@gate.net]
Sent: Sunday, April 30, 2000 1:05 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: CCI article error

> Steve: Since the TAPR web address is listed (and correct), is there a
> chance to have the correct compuserve address listed there
> somewhere or is
> it policy to not list a kit until it is available.

Greg is working on the web page. We normally have a page up. Especially
now with the CCI article.

- Steve

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(CL5`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`6````4D4Z($-#22!A
M<G1I8VQE(&5R<F]R``X''06 `P`.````T <$`!X`#P`3`!D````T`0$@@ ,`
M#@```- '! `>``\`$0`Y````@$!"8 !`"$````Y-$5",C%#1D$Y,45$-#$Q
M03@U-C P,#!%.#E",T,P.0`E!P$#D 8`< 8``"$````+``(``0````L`(P``
M`````P`F```````+`"D```````,`+@```````P`V``````! `#D`H(*4PNFR
MOP$>`' ``0```!8```!213H@0T-)(&%R=&EC;&4@97)R;W(````"`7$``0``
M`!8````!O[+IPI3/(>N5'JD1U*A6``#HFSP)```>`!X,`0````4```!33510
M`````!X''PP!````%P```'=M8F5A;'- 8V]M<'5S97)V92YC;VT```,`!A!F
M*)8@`P``$&8"```>``@0`0```&4```!35$5613I'4D5!5"Q42$%.2U-!5$Q%
M05-45$A%4D5)4T%"04-+55!43T]54D524D]21T]/1%1(24Y'24U.3U144EE)
M3D=43TU!2T5!3$E624Y'05-!4%)/3T8M4D5!1$525TE,``````(!"1 !````
M4@,``$X#``#F! ``3%I&=05B[TD#``H`<F-P9S$R-18R`/@+8&X.$# S,YT!
M]R "I /C`@!C: K X'-E=# @!Q,"@P!0H1!V<')Q,A%V?0J V0C((#L);PXP
M-0* "H$L=6,`4 L#8P!!=6P:;@(@90NF!@!T979<93H*H@J$"H!'"7!A$'0L
M('01`&YK<ZPN(!%P!4!L&0!S!4 3&5 $D&4@! `@82 B8@#0:W5P&4!O("T(
M82 $D -@<AFQ1V\'!' 900N 9R!))VWF(!;P&E%R>1SR&Y$`P,9K&K ;`&QI
M=ASR&C!G&O$2P!R09BT8\02!(7L8*@/P; E0&#D*]![ ,SXV`4 6D % 'X$7
MT&-TH1($,38@+2023P40'F<+@ = != 'D'-A9WYE)!,8)B,D(O$+$R,F:3 M
M,30T`4 >P#$XCC !0 S0)[-B($8#85L8$ R28A>E`Z!2&;!"!FD"8!JP6U--
M5%"0.G-R8BJ"0&<9$.1E+A<0=%T8)2C@!F"#`C I2'5N9&%Y&3#F01+ `Q$S
M,!DP`= H0 `@,3HP-2!030DL1U1O*4=405!2Z"!76 8`< 60!S$=(%\",!J1
M&D$8X A@<"Q(=8QB:B-1*4=;=W@`D 1G70?P13H@0T/^21KP`" -X"JA' ,E
MOR;*WR)T"[88,PKC"H ^%[4&`)T+@&,:L!IQ,+1W92C@_2 `9#(!!" :T1[
M&D )@'P@* !P'+ %H0EP(V I]QDP&M$:=&$Y%A#Q.B,;H!\1`!?P.E,\I3R1
M;7!U?1$P<C\A.S8[Y1IS.19SOP-P!] :@P6Q! `Y%FD%0/9P!O -X'D;@AUR
M.^(:\7YK0_$ML#50`R!#\1K2=G<+< M@*I$N&"T=$!K1=_\%L$5P'0$"(#I3
M.O(*L"5 [1FQ5QJP%O!R`, A,$1P+S\#'V$E,46@<!FQ17/_,51*@!@D%O '
MX /P&5 Z4WLT^4<++1>T(5Y.ER6667\(8#4A/W$(< EP`C!*@7/[,T $\F)!
M@AN@-$,?(3301G<&T!D`;'- 0!@N_T 1&"0P$$6A4K="< GP'+#[&P$/`6L;
M\ # `Q$;D1H1#1?P+31#)Z U-S WO$U .^(9H &0$L N!; 69Q@J$X$`6U `
M``,`$! ``````P`1$ `````#`( 0_____T `!S" `H>.Z;*_`4 `"#" `H>.
MZ;*_`0L``( (( 8`````, `````!&`````.%`````````P`"@ @@!@``
M```P `````$8`````$(4`````#``6 "" &`````# ````````1@``
M``!2A0``MPT```,`"8 (( 8`````, `````!&`````&%`````````'@`B
M@ @@!@`````P `````$8`````5(4```$````$````."XP``L`)H (( 8`
M`````, `````!&``````Z%`````````P`G@ @@!@`````P `````$8`
M````$84`````````#`"F "" &`````# ````````1@`````8A0```````!X`
M.( (( 8`````, `````!&`````#:%```!`````0`````````>`#F "" &
M``````# ````````1@`````WA0```0````$`````````'@`Z@ @@!@``````
MP `````$8`````.(4```$````!`````````!X`/0`!````!0```%)%.B `
-`````P`--/TW``"W=84`
```

```
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

105. [wxsig] Re: eio.com cable

```
From: William Beals <wmbeals@compuserve.com>
Date: Sun, 30 Apr 2000 15:24:09 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80875-2000.04.30-16.45.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

John:

No, it is not the out of stock one. I panicked when I saw that one too.
 Go to http://www.eio.com/99cent.htm and it is the top-left item, about
half way down the initial screen of data.

The attachment I sent was a GIF file. Didn't think it was that weird.
 Here it is in JPEG, I am pretty sure you have been able to see my JPEG
attachments.

will

-----Original Message-----
From: John Koster [SMTP:w9ddd@tapr.org]
Sent: Sunday, April 30, 2000 1:08 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: eio.com cable

Since PINE and EUDORA both refused to have anything to do with your
attachement, I went looking on the site. Is it the one they have marked
as temporarily unavailable? With the text splashed over the picture, it's
difficult to see the details.

If that isn't the one, could you post the URL?

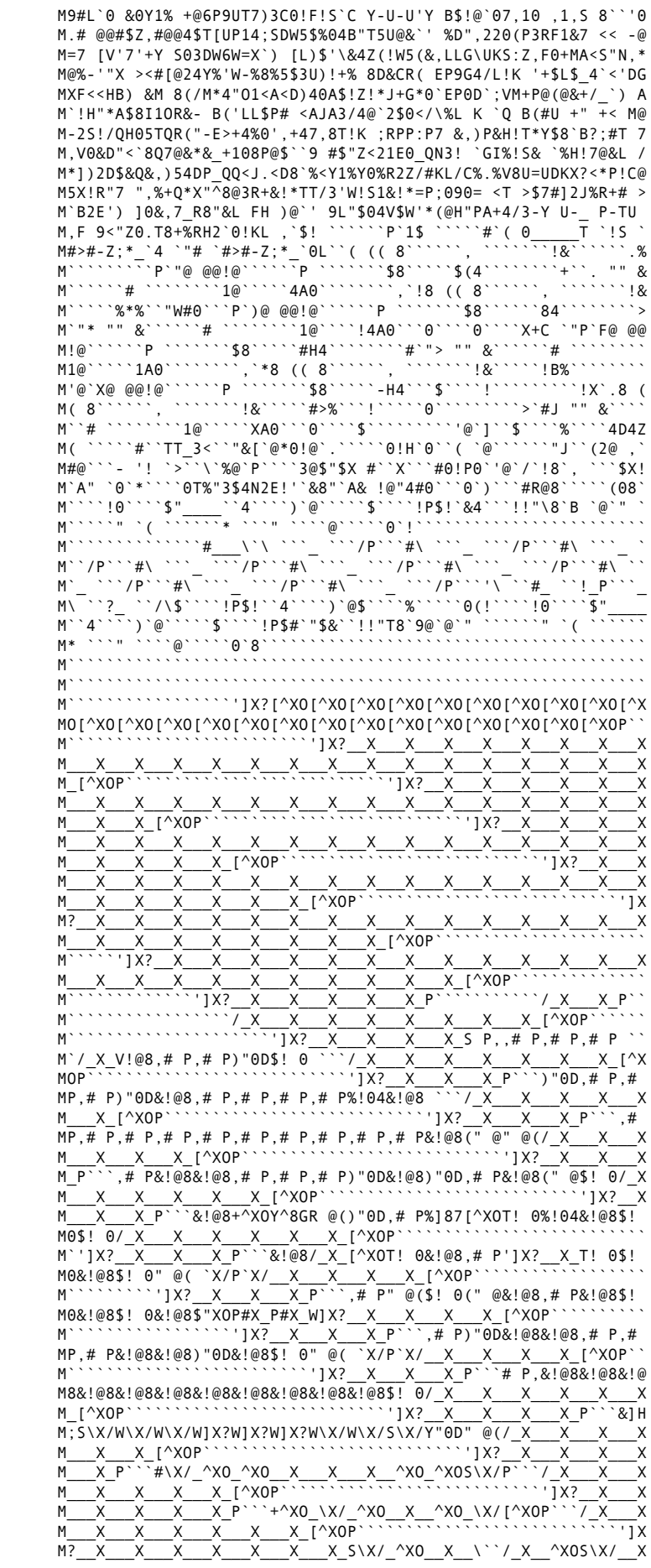
John Koster, W9DDD
<w9ddd@tapr.org>

```
---
You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 cable.jpg
M_]C_X `02D9)1@`!`0```0`!``#_VP!#``@&!@<&!0@'!P<)"0@*#!0-# L+
M#!D2$P\4'1H?'AT:'!P@)"XG("(L(QP<*#<I+# Q-#0T'R<Y/3@R/"XS-#+_
MVP!#`0D)"0P+#!@-#1@R(1PA,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R
M,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C+_P `1" !G`'D#`2(``A$!`Q$!_\0`
M&P`!``("`P``````````````````4&`P0!`@?_Q `Z$ `"`0,#`P$'`@,&!P$`
M```!`@,`!!$%$B$3,4$&%"(R46%QD2.!!Q5"0U)B@K'!%B0S5'*AT>'_Q `8
M`0$!`0$!``````````````````@$#!/_$`"41``("`@("``00#``````````!
M`A$#(1(Q(E%!!!-QL5+!\/_:``P#`0`"$0,1`#\`] I2E *4I0"E*4!CGEZ$
M+2%&95Y;:,D#R<><?3FH5=3-IKC6[S1&WOMDMM(7W') !7&?A.W@CC+8/<9F
M98>JR,'967.!GW3GP1YKSSU#8SZ=9M,MFB1B[)]E,I=4<Y*M&Q *I(K,C#@"
M0JPY(%<YMJCI"*>F7BQU-I[A[.[MVM;U`6Z9;<LB`XWHW]0Y&>Q&1D#(SLVL
MTTO6ZT#1;)65"1Q(H[,/IX^X-5-]0AU&TL=12Y62:PD$L4P&"\38W,5\?I]1
M6^3@X\5;(BL=U-%DEG(EY\<!<#Y?#G]ZJ3IHBNUZ,]*Q1SI+-+&F3TB S>,G
MG'W Q^166J,%*4H!2E* 4I2@%*4H!2E*`5$^H=*_FVE30KLZFW*J[!%<@YVL
MW](.,9\9SX%2U*QJU1J='DD:R:1IL_4$LD.UHUZD>)%C?=&H;RK>[)$RGX9;
M=.2'YNMCZA1M'M=3E82O)IO6<1D!7D4@%1]2S$#[U7O5$EM;>I)M-CNHDBU&
M(&Y5V!Z!9=I<#^GA(V^\2'^D5T]%ZC+>P_RB^@1;BVU$]9=NTH<F7CZ&1'/^
M6N37B_RBZ\D_:+[I-B=/TZ.!VWS$M),_]Z1B68_DFMVE*[)40W;L4I2A@I2E
M`*4I0"E*4 I2N&944LS!549))P`*`YK2U35['1K7VB_N%A0G"YY+'Y #DFJY
MK/K>.*1K/1XC=W)!]\#*+CS]1]>WWKSC5'DU>[,MU<R7ET&^.%1TT\E"_<^.
MV%&.Y%3=]''[RE+C#?Z(SUKK":IZRN[ZT=EC_3Z3$8*D(H/'@@Y'[5,_PWN[
MB7UA`S.&,SMU.HVXL1&QW#R3@L,_XC\ZKUQZ?,TT@MIR9$(WQRK[Z9/!.#C;
M\F[?/%6KT!IKZ-ZDMVO(A/<%9>B+>3>#P!N4C@C&X9^$<<]J6ODI9*5R9[12
MN%.Y0<$9&<&N:HZ"E*4`I2E *4I0"E=9)%B0NV<#P 23] !R3]!5(U[UE=>U
M&QTN%D8,8I6=<.&;A=O.!@\\@Y \=ZQR2[.>3+''V6+7/4NG:#$/:9=TS?!"
MG+-]_D/J:\^UOU)J&K&'VA_8;9V.V)92&VGRP\CZD8[X\5#2O=6T!O$M93U)
```

```
M61KJ7WCN'<!#R#G/Q>]Y"@<C$C17DH%K:O<=0EFEF<LS$]LL.YQY'?G \UE.
M2V<:GE7EI>E_9L)#$9IK&\BN+9I(EW=*0E-P'#D#N#G@C<.?A;-=K?1+JZOH
M]/EOHEA6`7$<F\!>B"!DD9X&> ,^<8YQM0:7*FG+9)FXNIVZD-H(22.V2N#[
M@QW)RN!SSVM^B^A881:R:JD%P88E_28;\RYRS,V!N'.-I! QW\G%:=(04HO@
MMD7IOIZ'5;%[32[9%TV8$2ZC<IEY1G^R4G[>^?EP6J[:5HUKI"N+<NS.%4LY
M' `P``,!1QG `Y-2``4````>!7-56[/0HT[?8I2E:4*4I0"E*4 I6*>ZM[8`
MSS1Q`]B[!1_[KB6ZMX8.O+/&D)_K9P%_-#.4>K,U5+7/2N9)[[3K>&X:4-UK
M2?E9,]RI/PD^<=QD9'!%@76=,;X=1M#]IE/^]9EO;5I1$MS"9&. H<9)P3V^
MP/X-2Z9$E&:[/(YMJ7W_`"\CW<DLA:2VG4]7J?)D.=Q)R ,LP&#U`>1-:'Z9
MU.<7$D<EK;)=/F=2.I[.< XC'U# $,?'O9(YN^HII$S"&_>U!#"4H[JI8@8!
M;R0/KQ6<:GIX&/;K;]YE_P#M8EOLXJ%2?)Z_)CTO1K+2(F%M&3*__5N)#NEE
M/^)O]A@#P!6_6&"\M;HD6]S#*5[B-PV/Q7$5Y:SG$-S#(?DD@/\`I]C^*K1Z
M%Q2T9Z4I6E"E*T[[5;+3E#74X3)Q@ L<_89-8VEV:DWI&Y2H"/U,)2S-;>S1
M*,A;FXBBGE&#RB$^Z..\A48[9YQ)6<EN(WE2Z:X9B-["3J<X\!>!Q_=&#]:S
MFBN$O1NTI2J(*5ZYFEDN+6R,Q2V:,ROA@""&`S\+9QN^'C/S&*I=RK=,KNDO
M+.%X]S1S(JQAT#;=I+,2N2#[QP0>QJY>K)DC]369D9T46Q]Z,R;LE^WZ;HW8
M'C)^QQ5-@>)[".UZ["Z#PH;0`G+!V4@C!PP]WN0.>QKBZY;/!DC!Y'R_W1I)
M!8,H)L)2&Y 61.5\8J0M+(2127,<5[!!;#J7,PVMC+ *,YXSG&<''R(.*D =
M2&V.XTZ62-%$; HV[A<+G)XP.WTKM:0K#HFM1WDTEH[1JL-K,T:BZ3=[S-D!
MO=!+>ZR@8RV1FNDH1HM_3XO1HWO6:WL[R9I[H/(T5U(/[)@/=4# &<$9/G/X
MPK+;,H*+>'/D8.!\^_/X^5;Q6*ZT*V@M6:6>6]%P(.J&D==@0D+CGE2#CC(8
MCW:V&COY&"W6CW+1%54!8'#':H5>Y^0%1CC%JV1#Z;'.*<DFS#IQUFP:YOM.
M>Y%E#MCNO:[9)6#,VU1[XPO.TYQG../EK^BM3N8_6J6W!C?,3AAN()TG.?!R
M.<=\GBINSG6T],ZS:W8]CO+J[MI+:WF=4DE19!EEW]P`,\G''-0?IZSEM_XB
M0EE)A>;,;!@<CIM@D@\^1_\`F*.*4RX88*:7PO@L&I_Q$NK#4KFU33X9!#-)
M&#O;.%8C)X^E2WI_U9>:Y9S2+I?ZJ3")1'("#QD]^>!D_MWS5&UK1]3GU^\<
M:9?-";J<AX[9V# N2"..W;G\5.>D?YWHMG?FVTF\5F8,2T>Q]NT`X#8+?5<_
M;')/:K/7=,M]U8:E/*S7E^MK"$#>RPLP?Y9.U3(5)YQL_P`W-:UMI<$=RP4W
M<0BRKI:LD+.O?(8=64 X\-']JKM]J'J:*24)HRSQRXVI<7"H%( ^%#G;Y[,/
M!XJ/TVT]77UPNH3:$EU<(P6.2>[=TB8?U+&&9@?MQ45C6W(ZR<ZZ?Z+]:_R;
MI V.F6,JK(9D:UA+B4@^9"Y7?P,DL"34DLT\V&>VB@'Q`!B6_P#%ADC\&J)+
M;>M].N);O4-6TNR23+;Y8[@IP,\*^$''@"IG2=:><;)=>LK^X/.R"V$!/SX+
M_4=L#Z5CG&K.?E_$LU*Z1%VC4R* Q R/V_?_`%/WKO5@U;S3X;_I"?<R1N)
MG&UB.V0>]:=QZ;TN>.%1;"!H).I%)!^FZ-GC!'RJ6I6<40\4).VMD+_PS;_]
M]J. <@&Y)P<8S^.*Z'TGITMQ#-<R7-T83E%N)=ZCG/8CY\U.TIQ1CPP>FB#;
MTIIZZ@E]:O<65PG*-:.(]AQM)&!W(XK.-#(`QK&L@@Y!]N?YY[9Q4K2LXH1Q
M0CTB.@T:VCN9+BX>6_E<( U\PG*!2Q 4L"0,NQ(SSFL.F>G;32;CK6LDP.SI
MX.S&W/"\+X_)\DU+TIQ5V:\<6*4I5%BE*4 SBL=Q!#=H4N8DF4G)$BA@3^]9
>*4!B@M8+5=EO"D2 8"HNU0,D\ <#DG\UEI2@/__9
`
end

begin 600 WINMAIL.DAT
M>)\^(@45`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.`````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G`````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`>````4D4Z(%MW>'-I
M9UT@4F4Z(&5I;RYC;VT@8V%B;&4`S0D!!8 #``X```#0!P0`'@`/`!@`"0``
M``"D!`2" `P`.````T <$`!X`#P`3`"P```!''`0$)@ $`(0```#DX14(R,4-&
M03DQ140T,3%!.#4V,# P,$4X.4(S0S Y`"D'`0.0!@!X!P``(@````L``@`!
M````"P`C```````#`"8``````L`*0```````P`N``````#`#8``````$ `
M.0!@$SILZK*_`1X`< `!````'@```%)%.B!;=WAS:6==(%)E.B!E:6\N8V]M
M(&-A8FQE````@%Q``$````6`````;^RZFPZSR'KF1ZI$=2H5@``Z)L\"0``
M'@`># $````%````4TU44 `````>`!\,`0```!<```!W;6)E86QS0&-O;7!U
M<V5R=F4N8V]M```#``80WNK^_ ,`!Q ?`P``@`($ $```!E````2D](3CI.
M3RQ)5$E33D]45$A%3U543T935$]#2T].14E004Y)0TM%1%=(14Y)4T%75$A!
M5$].151/3T=/5$](5%10.B\O5U=714E/0T]-+SDY0T5.5$A434%.1$E425-4
M2$543P``````"`0D0`0```#0$```P! ``[ 4``$Q:1G6$@7IA=P`*`0,!]R "
MI /C`@!C@F@*P'-E=# @!Q.'`H,`4 [V<')Q,@_V)GT*@ C((#L);S(U9C4"
M@ J!=6,`4 L#8P,`00M@;F<Q,#,S*0Q@;&X"(&4+IB!*<&]H;CH*H@J$"H!.
ML&\L(&D%0 0`(!8`805 =&AE( A@!4!O@&8@<W1O8VL8\,$6("X@($D@"K #
M`',9H F ('<8T .@&C!S=F$'X!C 81DA%B 8L&]R;QH!1V\<$0,P%> @@F@"
M0' Z+R]W'9 8+F5I'$ %H&TO.:0Y8PGP="X=(&T5U3\:$ !P&L 8)!C"&8!P
M+>9L`7$8$65M& `!H!D"!0^ ;!E0=V%Y(&3\;W<#H!C""X 8( <Q&6"7!0`)
MX1DR9!NP82X7*OY4&-$;L &0#W '@ (P&R(7);(B``0@81QP248@!F8#$!GR
M1&ED;B>_&*(+@!FP&"$F8AN3=QW0^PL@&@%(!) BL1@S"X 6P)A014<8`!HP
M86T:0+<)< ) (B!S"' 8X'D(8/4AH788X&(C@@&@(* <HKL/L!C@;2(@*F(E
M.7,D.Q!<;V)J)4%P:%SN)PP!%SD#\&P)4"[*"P/P;&DS-@% %1 P,0-@"2$`
M8W00A#$V("VU- )/!1!G"X C(4T'D/D;4&=E- ,7)C,4,#,+,<$S%FDM,30T
M`4 R8#@Q.# !0 S0-Z-B("Y&`V$7$ R28A:T($L&;QEP!) @6U--5*!0.G<Y
```



```
M___X___X___X___X___X___X___X___X_[^XOP``````````````````````
M`````']X?__X___X___X___X___X___X___X___X_P```']X?W]X?W]X?P``
M`/_X___X___X___X___X___X___X___X___X___X_[^XOP```````````````
M`````````````']X?__X___X___X___X___X___X___X___X___X___X___X
M___X___X___X___X___X___X___X___X___X___X___X___X_[^XOP``````
M`````````````````````']X?__X___X___X___X___X___X___X___X___X
M___X___X___X___X___X___X___X___X___X___X___X___X___X___X_[^X
MOP```````````````````````````']X?__X___X___X___X___X___X___X
M___X___X___X___X___X___X___X___X___X___X___X_W]X?P``````````
M`````````````````````````````````````']X?__X___X___X___X___X
M___X___X___X___X___X___X___X___X___X___X___X___X_W]X?__X___X
M___X_[^XOW]X?P`````````````````````````````````']X?__X___X___X
M___X___X___X___X___X___X___X___X___X___X___X___X___X___X___X
M_W]X?__X_[^XOW]X?P```````````````````````````````````']X?__X
M___X___X___X___X___X___X___X___X___X___X___X___X___X___X___X
M___X___X_W]X?[^XOW]X?P`````````````````````````````````````
M``]X?__X___X___X___X___X___X___X___X___X___X___X___X___X___X
M___X___X___X___X_W]X?W]X?P`````````````````````````````````
M`````````']X?__X___X___X___X___X___X___X___X___X___X___X___X
M___X___X___X___X___X_W]X?P`````````````````````````````````
M```````````````````']X?W]X?W]X?W]X?W]X?W]X?W]X?W]X?W]X?W]X
M?W]X?W]X?W]X?W]X?W]X?W]X?W]X?W]X?P`````````````````````````
M``````````0````''0$`!0````D"`0````4````!`@$````#``````!9,P(!
MD 8`"@```&-A8FQE+FIP9P!F`P(%D 8`O ````\````#`" .1AD``!X``3 !
M`````"@```&-A8FQE+FIP9P```$ `!S" \K8[ZK*_`4 `"# `!( [ZK*_`0(!
M`C<!`````````!X``S<!````!0```"YJ<&<``````P`%-P$````>``<W`0``
M``H```!C86)L92YJ<&<````#``LW: $```,`^G\`````0 #[?P! W:-71;,,
F0 #\?P! W:-71;,,`P#]?P`````+`/Y_``````,`(0Y%+ $`OR)
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

106. [wxsig] Re: eio.com cable

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 30 Apr 2000 18:58:03 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80880-2000.04.30-17.59.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Interesting, this place doesn't take credit cards.

I'll give them a call tomorrow and see about the 20x4 LCD they have and
about the cables. The out of stock cable looks exactly like what we want.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of William Beals
> Sent: Sunday, April 30, 2000 5:24 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: eio.com cable
>
>
> John:
>
> No, it is not the out of stock one. I panicked when I saw that one too.
> Go to http://www.eio.com/99cent.htm and it is the top-left item, about
> half way down the initial screen of data.
>
> The attachment I sent was a GIF file. Didn't think it was that weird.
> Here it is in JPEG, I am pretty sure you have been able to see my JPEG
> attachments.
>
>
>
> will
>
> -----Original Message-----
> From: John Koster [SMTP:w9ddd@tapr.org]
> Sent: Sunday, April 30, 2000 1:08 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: eio.com cable
>

>
> Since PINE and EUDORA both refused to have anything to do with your
> attachement, I went looking on the site. Is it the one they have marked
> as temporarily unavailable? With the text splashed over the picture, it's
> difficult to see the details.
>
> If that isn't the one, could you post the URL?
>
> John Koster, W9DDD
> <w9ddd@tapr.org>
>
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

107. [wxsig] Cables, positions, and metric

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 30 Apr 2000 19:29:03 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80917-2000.04.30-20.34.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

John and Steve: Yes, it looks the out-of-stock cable would have been the
perfect for our application (or as best I can tell from the dinky
picture!). The one that is in stock I think makes a decent second choice
though. Hopefully they have a bunch.

John: I did some poking around in my MS Outlook settings to see if I had
any flexibility on what I do with attachments. I can't seem to find much.
 The best I can find is to ensure that I use SMTP protocol and not messing
with any fancy formatting on the output text.

All: I have put in the code for adding the (user-optional) position string
to the TNC message. It gets saved in Flash so it gets remembered between
power cycles. Of interest is that the APRS spec calls out for a different
time/data and weather string format when the position is added to the
string. Kind of a pain to deal with, but nothing a lot of conditional
branches couldn't get around.

All: I am also putting metric support in this release. From what I can
tell, I leave all the TNC/Computer/Peet strings alone as those are all
governed by specs. All I need to mess with is the display routines.
 Celcius for temperature and Km/h for wind speed are easy. Is the accepted
unit for rainfall tenths of a millimeter?

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

108. [wxsig] Re: New TNC mode

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Sun, 30 Apr 2000 22:05:11 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-80924-2000.04.30-21.06.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, April 29, 2000 8:43 PM
Subject: [wxsig] New TNC mode

> Brian (really!):
>
> Have you had a chance to check out the TNC mode that is for the
second UART on the KPC3+ yet?
>
> will

I just got home from a trip and the cable assembly I needed has
arrived from Steve B (thanks Steve) I hope to have some news for you
before to long this week.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

109. [wxsig] Re: Firmware status

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 30 Apr 2000 21:20:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80934-2000.04.30-22.23.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

>
> Second rain question. For the rain-past-hour I am currently consuming 24
> bytes of RAM because I'm storing the entire 16-bit rain counter each five
> minutes. I could get away with only one byte per interval if I knew that
> 2.55 inches of rain in one hour was essentially impossible. Is it? (at
> 16-bits I am REALLY sure that 655.35 inches of rain in one hour is pretty
> unlikely!!!)
>

I know that an inch of rain in an hour is a lot of rain. I'm sure that 2.55
inches of rain in an hour has happened, but is unlikely. I would suggest that
you use one byte per interval, but put hooks in to divide by two and then
rescale. This would cost a little resolution, but would save the storage. We
would only do this divide by two (and lose the resolution) if experience showed
that 2.55 inches/hour assumption was not valid.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

110. [wxsig] Re: Cables, positions, and metric

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 30 Apr 2000 21:29:02 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80936-2000.04.30-22.30.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> All: I am also putting metric support in this release. From what I can
> tell, I leave all the TNC/Computer/Peet strings alone as those are all
> governed by specs. All I need to mess with is the display routines.
> Celcius for temperature and Km/h for wind speed are easy. Is the accepted
> unit for rainfall tenths of a millimeter?
>

I will check what the metric rainfall unit is. I think that it's millimeters,
but I'll find out for sure tomorrow.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

111. [wxsig] Re: CCI article error

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 30 Apr 2000 21:32:17 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80937-2000.04.30-22.34.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> Folks:
>
> The CCI article had an error in it. The website address for the weather
> station was mistyped and neither Russ nor I caught it. OOPS! An
> enterprising soul managed to find the correct address and let me know
> yesterday.
>
> Russ: Would you like me to Email CCI and ask if they can print a
> correction?
>

I'll take care of this tomorrow.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

112. [wxsig] Rain stuff

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 30 Apr 2000 21:50:39 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80939-2000.04.30-22.53.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ:

Thanks for chasing down what the standard metric unit of rainfall is. That
will help.

I'd rather not mess with dynamic jugging between 1/100ths an 2/100ths for
the rain-past-hour. More complicated to code, harder to verify, and more
likely to have bugs. If more than 2.55 inches is possible in an hour, I'd
rather stick with two bytes (yuk!) per entry or always scale to 2/100ths
for storage (hmmm...).

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

113. [wxsig] Re: Rain stuff

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 30 Apr 2000 22:24:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-80941-2000.04.30-23.26.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

I didn't mean dynamic juggling. I meant use 1/100 resolution and 1 byte
storage and if there are problems or complaints, change to 2/100 resolution and
1 byte storage.

Russ

William Beals wrote:

> Russ:
>
> Thanks for chasing down what the standard metric unit of rainfall is. That
> will help.
>
> I'd rather not mess with dynamic jugging between 1/100ths an 2/100ths for
> the rain-past-hour. More complicated to code, harder to verify, and more
> likely to have bugs. If more than 2.55 inches is possible in an hour, I'd
> rather stick with two bytes (yuk!) per entry or always scale to 2/100ths
> for storage (hmmm...).
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
> ---
> You are currently subscribed to wxsig as: kb0tvj@bouldernews.infi.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

May 2000

Original source file: wxsig.0005
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0005

1. [wxsig] RE: Rain stuff

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 1 May 2000 10:52:23 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81031-2000.05.01-09.54.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I'd rather not mess with dynamic jugging between 1/100ths an 2/100ths for
> the rain-past-hour. More complicated to code, harder to verify, and more
> likely to have bugs. If more than 2.55 inches is possible in an
> hour, I'd
> rather stick with two bytes (yuk!) per entry or always scale to 2/100ths
> for storage (hmmm...).

And to save on the date code, use only the last two digits of the year
<grin>.

Sorry, I had to do it. (Oh, if I can only stop rolling on the floor :-).

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] RE: Rain stuff

From: Russ Hummel <hummel@HSC.VCU.EDU>
Date: Mon, 01 May 2000 11:05:33 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81037-2000.05.01-10.07.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In response to the question of Max rain fall in a day I received 16 inches
during the hurricane last fall Not typical of Virginia but it does happen

Thanks for all your hard work guy and I read the Article in CCI this
weekend. See you at Dayton in 3 weeks or so.   Russ Hummel WB4PGT

.At 10:52 AM 5/1/00 -0400, you wrote:
> > I'd rather not mess with dynamic jugging between 1/100ths an 2/100ths for
> > the rain-past-hour. More complicated to code, harder to verify, and more
> > likely to have bugs. If more than 2.55 inches is possible in an
> > hour, I'd
> > rather stick with two bytes (yuk!) per entry or always scale to 2/100ths
> > for storage (hmmm...).
>
>And to save on the date code, use only the last two digits of the year
><grin>.
>
>Sorry, I had to do it. (Oh, if I can only stop rolling on the floor :-).
>
>
>- Steve
>
>
>---
>You are currently subscribed to wxsig as: hummel@hsc.vcu.edu
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Russ Hummel   CTA2RD
Biomedical Engineer & LAN Manager
Dept of Anesthesiology
Medical College of VA @ VCU
804-828-2212

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Re: Rain stuff

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Mon, 1 May 2000 17:50:04 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81121-2000.05.01-16.49.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would say scale to .02 inches. I really don't see that that gauge
would be significantly more accurate than that anyway.

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, April 30, 2000 11:50 PM
Subject: [wxsig] Rain stuff

> Russ:
>
> Thanks for chasing down what the standard metric unit of rainfall
is. That
> will help.
>
> I'd rather not mess with dynamic jugging between 1/100ths an
2/100ths for
> the rain-past-hour. More complicated to code, harder to verify, and
more
> likely to have bugs. If more than 2.55 inches is possible in an
hour, I'd
> rather stick with two bytes (yuk!) per entry or always scale to
2/100ths
> for storage (hmmm...).
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to
leave-wxsig-15067P@lists.tapr.org
>
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] Metric Units

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 01 May 2000 19:40:49 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81178-2000.05.01-20.43.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yesterday I said that I'd find out what the metric units of rainfall
rate and accumulation are. I did and not what I would have expected.

> Russ,
>
> Mike looked this up for me in his SI handbook... The Standard
> International base units for precip accumulation and
> accumlation rate are meters and kg/m**2/sec (= mm/sec), respectively.
> Your users would probably accept derived units (e.g. mm instead of m
> for
> accumulation) though, since they take less digits to transmit.
>

That just goes to show that you should not ask, because you might not

like what you get for an answer. So, I suggest that you use mm for
metric rain accumulation and mm/hr for the metric rain rate, where
mm=meter/1000.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

5. [wxsig] RE: Metric Units

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 1 May 2000 20:33:30 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81204-2000.05.01-21.40.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I guess I should be careful what I ask for!

mm accumulation and mm/hr for rate sounds good to me.

will

-----Original Message-----
From: Russ Chadwick [SMTP:kb0tvj@boulderneWS.infi.net]
Sent: Monday, May 01, 2000 7:41 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Metric Units

Yesterday I said that I'd find out what the metric units of rainfall
rate and accumulation are. I did and not what I would have expected.

> Russ,
>
> Mike looked this up for me in his SI handbook... The Standard
> International base units for precip accumulation and
> accumlation rate are meters and kg/m**2/sec (= mm/sec), respectively.
> Your users would probably accept derived units (e.g. mm instead of m
> for
> accumulation) though, since they take less digits to transmit.
>

That just goes to show that you should not ask, because you might not
like what you get for an answer. So, I suggest that you use mm for
metric rain accumulation and mm/hr for the metric rain rate, where
mm=meter/1000.

Russ

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@,"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`9````4D4Z(%MW>'-I
M9UT@365T<FEC(%5N:71S`)((`06 `P`.````T <%``$`% `A`!X``0`Q`0$@
M@ ,`#@```- '!0`!`!0`( `O``$`00$!"8 !`"$```!$1$8P03(P,3DY,49$
M-#$Q03@U-C P,#!%.#E",T,P.0`0!P$#D 8`; <``"$````+``(``0````L`
M(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`0!J=
MS=ZSOP$>`' ``0```!D```!213H@6W=X<VEG72!-971R:6,@56YI=',`````
M`@%Q``$````6`````;^SWLV=`:+PWA^9$=2H5@``Z)L\"0```@`># $````%
M````4TU44 `````>`!\,`0```!<```!W;6)E86QS0&-O;7!U<V5R=F4N8V]M
M```#``80Y[4)!P,`!Q"/`P```@`($ $```!E````24=515-325-(3U5,1$)%
M0T%214953%=(051)05-+1D]234U!0T-5355,051)3TY!3D1-32](4D9/4E)!
```

```
M5$533U5.1%-'3T]$5$]-15=)3$PM+2TM+4]224=)3D%,34534T%'10`````"
M`0D0`0```$P$``!(! ``<@8``$Q:1G5\+-2N=P`*`0,!]R "I /C`@!C@F@*
MP'-E=# @!Q.'`H,`4 [V<')Q,@_V)GT*@ C((#L);S(U9C4"@ J!=6,`4 L#
M8P,`00M@;F<Q,#,S*0Q@;&X"(&4+IB!)G"!G"E $$1;0<V@(8(!L9"!B92!C
M"L!S`1 5X"!W#X %0!;08<AS:R "$'(A"J(*A D*@&UM&/!C8W5MVQ7@&+!I
M`B 8\&X7P!I S"]H!< 902!R&+ 7\$YS"& ;4 0@9V\$<"!D=&\;<&4N&8H#
M\&R'"5 9F0KT;&DS-@% EQ40`4 10&\<0&-T$(10,38@+2%23P409X\+@ =
M!= 7$6%G92%3'QF&(&0@,0L3(&9I+3&,-#0!0!^P,3@P`4"C#- D\V(@1@-A
M.@R#4F(/X%)U!!%##X!D!0/P8QD@6U--5%"$.FLFX'1V:D &X&<7H021!]!S
M+@N ), N^18@=%T9A28@!F ",":'PDT"(&1A>2P%T"NP." P,2O0`= E@" W
M0#HT,2!032H75 )O)H=405!2(%?Z6 8`< 60!S$6P (P!)!+!Y %0$<#8'5P
M*AAUC&)J()$FAUMW> "0%&==(B%T!1!C(%7]`P!T#T C#R09'[0+MAF3^PKC
M"H!9+\$$D"NA%T(+</L=$1BC)Q? ), ;40A@!4#_&),WH!?P!X R@QR0,O$X
M</YF'!$I@0= 'H4<(QM"&GSI"7 N(!;!9#=Q&T(6`%LXI1;0=Q>3#X!V%_!E
M5G@O`1Q 9!V+/B<#+&,_Y3_F36EK%_ )`&]O0< W@@0`.;!P&],'@"#W"X ^
MD$*!4Q;0#X ;4 ;@W4(0+D1P+; Y(5,!D"N1OPLB0 0O<R'P&O(B`6(9`/\7
M\#G$&^(10"\10L :?C_F_QIS&M4[- EP.4($D 0@&T(`:V<O;2HJ,B^S#[ R
ML"@]&W),,2DKT,LOL3\2:3[ ;'D=A4! _ED(83FP#[!+03Y$(%%&T/<"8"P0
M&G%E!3$$@4VA%\#U.<0H'7!G/, :00N -K%[)X Z$FT_YAE!23L:Q2FS-Y$(
M8&=H*] `D&Y00/\Y`BP0`9!!PA<2/1 AT#GQ]QTQ,H `<6TR\$WV&8I$L/T8
ML6HG( 5 '. 'D1TQ%W'[!^ WHWD(8!=F/9(9`2O0_Q?@&!!.T5JS5Y!5$ 5
M/9'_&80?L$'!&)-:PB* !4 ;XIL#D0!Q=P20/,%3;RO0_Q=150`B@"_16G=<
M0AI!4T?_.54Z4D@O&WDY&6*S'"(KT-<8D"^A&>8]2P,O%9 E@/\=BR<2'IX*
M@"+'3H%*LV,@WG()< (P3_%@,&($\A?@=QT3,?,8\3H8@ ;04D!L9'- !:!M
M<$[2/L N_VUQ6*4=0!R0:W<78 GP.Z'W%] 541D@90# `Q$=,590#3ZQ+3'S
M). U-S W?$U '[ OT"E@`9 10"XM!;!G&8H2`0!T$ ,`$! ``````P`1$ ``
M```#`( 0_____T `!S! 8%>TWK._`4 `"#! 8%>TWK._`0L``( (( 8`````
M`, ```````!&``````.%`````````P`"@ @@!@``````P ```````$8`````
M$(4```````#``6 "" &``````# ```````1@````!2A0``MPT```,`"8 (
M( 8``````, ```````!&``````&%```````'@`B@ @@!@``````P ``````
M`$8`````5(4```$````$````."XP``L`)H (( 8``````, ```````!&````
M``Z%`````````P`G@ @@!@``````P ```````$8`````$84```````#`"F
M"" &``````# ```````1@`````8A0```````!X`.( (( 8``````, ``````
M``!&`````#:%```!`````0`````````>`#F "" &``````# ```````1@``
M```WA0```0````$`````````'@`Z@ @@!@``````P ```````$8``````.(4`
K``$````!`````````!X`/0`!````!0```%)%.B ``````P`--/TW```+VX4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

6. [wxsig] RE: Rain stuff

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 1 May 2000 20:21:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81206-2000.05.01-21.44.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ H:

My solution for the display to handle up to 99.9 inches in a month applies
to all the display elements. If you get another hurricane, I'd give you
the correct display on the LCD, but the APRS format would croak.

will

-----Original Message-----
From: Russ Hummel [SMTP:hummel@HSC.VCU.EDU]
Sent: Monday, May 01, 2000 9:06 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Rain stuff

In response to the question of Max rain fall in a day I received 16 inches
during the hurricane last fall Not typical of Virginia but it does happen

Thanks for all your hard work guy and I read the Article in CCI this
weekend. See you at Dayton in 3 weeks or so.   Russ Hummel WB4PGT

.At 10:52 AM 5/1/00 -0400, you wrote:
> > I'd rather not mess with dynamic jugging between 1/100ths an 2/100ths
for
> > the rain-past-hour. More complicated to code, harder to verify, and
more
> > likely to have bugs. If more than 2.55 inches is possible in an
> > hour, I'd

> > rather stick with two bytes (yuk!) per entry or always scale to
2/100ths
> > for storage (hmmm...).
>
>And to save on the date code, use only the last two digits of the year
><grin>.
>
>Sorry, I had to do it. (Oh, if I can only stop rolling on the floor :-).
>
>
>- Steve
>
>
>---
>You are currently subscribed to wxsig as: hummel@hsc.vcu.edu
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Russ Hummel   CTA2RD
Biomedical Engineer & LAN Manager
Dept of Anesthesiology
Medical College of VA @ VCU
804-828-2212

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(C,"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`;````4D4Z(%MW>'-I
M9UT@4D4Z(%)A:6X@<W1U9F8`O@@!!8 #``X```#0!P4``0`4`!4`$P`!`!H!
M`2" `P`.````T <%``$`% `2`#L``0`_`0$)@ $`(0```$,T1C!!,C Q.3DQ
M1D0T,3%!.#4V,# P,$4X.4(S0S Y`/\&`0.0!@#8" ``(0````L``@`!````
M"P`C```````#`"8```````L`*0```````P`N```````#`#8``````$ `.0`@
M1SL:W;._`1X`< `!````&P```%)%.B!;=WAS:6==(%)%.B!286EN('-T=69F
M```"`7$``0```!8````!O[/=&CL!HO#%'YD1U*A6``#HFSP)```>`!X,`0``
M``4```!33510`````!X``PP!````%P```'=M8F5A;'- 8V]M<'5S97)V92YC
M;VT```,`!A#!<VEF`P``'$ $%```>``@0`0```&4```!255-32#I-65-/3%54
M24].1D]25$A%1$E34$Q!651/2$%.1$Q%55!43SDY.4E.0TA%4TE.04U/3E1(
M05!03$E%4U1/04Q,5$A%1$E34$Q!645,14U%3E1324993U5'151!3D]4````
M``(!"1 !````M04``+$%``"L" ``3%I&=1]J!HMW``H!`P'W( *D`^,"`&."
M: K <V5T," '$X<"@P!0#O9P<G$R#_8F?0J ",@@.PEO,C5F-0* "H%U8P!0
M"P-C`P!!"V!N9S$P,S-I#&!L;@(@90NF!_!U.0012#H*H@J$"H!->40@<P;P
M=71I`B @@P(0!<!T:&4@9 0`(PM1&!!T;R /@&YD$FP9('5P&;(Y.2X\.2 +
M@]P!Y$+@"!AUB $8 (P:!N@< M0")#?!" 9P0= `R 9"F4:, > `0(P<RX@
M($EF(/)Y"& @9P_ &Z 6`!D!+07 : AP!1!C``!E+,D>@"=D'O!I=AD@'L+W
M&0(%H0EP8P5 &488D1D":$Q#1"!08AA@&/-!O%!2!? 8P0# !4!W"&"&;""0
M!0!O86LN%TJ?`_ <\!=*"O0<8#,V`4 _%1 !0!% 'V AP1"$,3:T("TI`D\%
M$""P;@= \P70!Y!S81\`*0,71B@4!R?A"Q,H%FDM,30TXP% '& Q.# !0 S0
M+*.X8B!&`V$7, R28A:V#'5M!X #(%M3350,4#H?P"\R0$A30P`N5D-5+D5$
M5;Y=%T4MT 9@`C N-TT"()9D&9 @4$T9D3 Q(% G`= M,!JP.C HX$%-*3$7
M5&\N-U0CP2!7^E@&`' %D <Q'H ", 20.P>0!4!''V :8#$8=6)&:B'!+C=;
M=W@`D&=R70?P13H'\ MQ&"!T_G4!("JO*[HG9 NV%U,*X^L*@#9P(#:Q< (@
M#[9LMT9`G$*4#;0&()O'J R\/9X/= YLF8<XAN#,J$>@/D]T6-E(,$@D"C1
M&Q471/YD"'$5<!CS'\<>< M@-M'/0#,'L!]@&/!Y<" !`R!Q/W%6:7(I@0<P
M(S-I?2'A;P>1#X <0 GP%TI4_1GQ:P0@&,(<XA[!'Z$+$>DD<7)K'O!U&! :
M`4$#?F$@D".#`" @`!HQ&X%#7D-!$!D`! `]17<)X&N]"?!D'F$&8"#D)%%$
M&9#W&< #H!N!,R1P3/$$(6Q#Q@P'F$NNS6P0C101S)4%THN005 %9 Z-8$1
M<4T@-2\Q+S.1M"TP+, P(% >PG<H$OD7-3X@5(@<C_@'W,?49\;P"GQ)'!&
MD!P09'DIH,)M(`@:G5G*8%#$+YB#\!,X0.@4L 5D# 9`/L$(.1,E?F&,%4
M*!D"/^+F+0JP-M M: AA'F$R</L)<"%Q;1Q1(! H,$KA&=#_!: !`"!027(?
MD1G!(- &@7\RP4I2!&)<%0H'&!-$&SW&:4@T2- 9QY57D(8\5ABOBX4$!L'
M!" ^$ 00:0)@_TNC`'!4*%K2(%-4*%4%/Q'>8TGP5@-7<!G08DY0!Y' *'EU
M:R$I8C ?D>T>(7(B84C"=QF0!" $\/\'0#Y36)94*!C"-M %L"HAI6:@:"\P
M;2YK("DE-?H^5"5!2F$9P2H0(-$BA?\RH"@P7'46X&SR7V(9$40COV82&4 @
ML!Y /V(9`GE*P*U91CP)P N /FMM4R&1?S+!01 /@%PS1L!&@1YA*/Q/:"!0
M!I!!`2 1;F1J4=\:< -@'/!"\B*%9@D`!;'L.BUK7E0E+08`*# @T.=W#W@3
M*H8^64W26V(?T?\>(73R-_ $\E=07#,X\QN@CG,Y@"_E6#!C+G9[,/XN"8 ,

```
M<%0T-, :4 " >^;_&"!-(1NA`F!(41W0`, #$3<9P1HP7]$M./,LD#4W\# W
M34 <8#;0'E !D/410"X%L&<72D_K2^ U<.@R4D071$(8@ > &4"]15)%%7 +
M@ G@!< F(N \04XRX2F@'P!9141E?P4Q/W%L4#;!&T$8@ D`9]YY%Z6%Y0A0
M'/!E:J%%DGA!($!%L#"@%T0M(#0`+3@R."TR,C&^,A=**G=ZOWO/?-9W!M"Q
M2L!L<T!;DFXQ<B#0_BY;D4?5?O^ #X$?@B^#.P42`0"7L ````,`$! `````
M`P`1$ `````#`( 0_____T `!S" <L?&W+._`4 `"#" <L?&W+._`0L``( (
M( 8``````, `````````!&``````.%`````````P`"@ @@!@``````P ``````
M`$8````$(4`````````#``6 "" &`````# ````````1@````!2A0``MPT`
M``,`"8 (( 8``````, `````````!&`````&%`````````'@`B@ @@!@``````
MP ```````$8`````5(4```$````$````."XP``L`)H (( 8``````, `````
M``!&`````Z%`````````P`G@ @@!@`````P ```````$8`````$84`````
M```#`"F "" &`````# ````````1@````8A0```````!X`.( (( 8`````
M`, ```````!&`````#:%```!`````0`````````>`#F "" &``````# ````
M````1@````WA0```0````$`````````'@`Z@ @@!@``````P ```````$8`
M````.(4```$````!`````````!X`/0`!````!0```%)%.B ``````P`--/TW
$``!Z284`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

7. [wxsig] RE: Rain stuff

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 1 May 2000 20:14:07 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81207-2000.05.01-21.44.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yea, yea, yea... :-)

(BTW: I do only use two digits for the year and I handled Y2K quite gracefully, thank-you. Y3K will miss a leap-year though.)

will

-----Original Message-----
From: Steven R. Bible [SMTP:srbible@gate.net]
Sent: Monday, May 01, 2000 8:52 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Rain stuff

> I'd rather not mess with dynamic jugging between 1/100ths an 2/100ths for
> the rain-past-hour. More complicated to code, harder to verify, and more
> likely to have bugs. If more than 2.55 inches is possible in an
> hour, I'd
> rather stick with two bytes (yuk!) per entry or always scale to 2/100ths
> for storage (hmmm...).

And to save on the date code, use only the last two digits of the year
<grin>.

Sorry, I had to do it. (Oh, if I can only stop rolling on the floor :-).

- Steve

```
---
You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(B\"``0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G`````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M`````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`;````4D4Z(%MW>'-I
```

```
M9UT@4D4Z(%)A:6X@<W1U9F8`O@@!!8 #``X```#0!P4``0`4``X`!P`!``<!
M`2" `P`.````T <%``$`% `+`"H``0`G`0$)@ $`(0```$)&1C!!,C Q.3DQ
M1D0T,3%!.#4V,# P,$4X.4(S0S Y`! ``0.0!@`P!P``(0````L``@`!````
M"P`C```````#`"8```````L`*0```````P`N```````#`#8``````$ `.0!
M')08W+._`1X`< `!````&P```%)%.B!;=WAS:6==(%)%.B!286EN('-T=69F
M```"`7$``0```!8````!O[/<&)0!HO#!'YD1U*A6``#HFSP)```>`!X,`0``
M``4```!33510`````!X``PP!````%P```'=M8F5A;'- 8V]M<'5S97)V92YC
M;VT```,`!A";N=_M`P`'$/0"```>``@0`0```&4```!914$L645!+%E%03HM
M*2A"5%<Z241/3TY,655315173T1)1TE44T9/4E1(15E%05)!3D1)2$%.1$Q%
M1%DR2U%5251%1U)!0T5&54Q,62Q42$%.2RU93U59,TM724Q,34E34T%,````
M``(!"1 !````#@0```H$``"M!0``3%I&=0R8B4UW``H!`P'W( *D`^,"``&."
M: K <V5T," '$X<"@P!0#O9P<G$R#_8F?0J ",@@.PEO,C5F-0* "H%U8P!0
M"P-C`P!!"V!N9S$P,S,I#&!L;@(@90NF(%F@96$L('D6Y2X7H' @.BTI"J(*
MA J * !"5%<Z("!)( AD;R "(&QY('41#[ @='<9<&1I9YQI= 0@`A %P'1H
M&@!W%R$%P !P9!DQ#X ;L&R#"8 6P#)+('%U&I#_&@`)P #0`1 5X!FP%P`;
M$'$`<&LM>0A@%\ 6P#,G'* #\!V0(&T$`F$@>1Q 87 >,!MB&Q (8&<\:"X8
M"Q[B&!H*]&QIO#,V`4 5$ % $4!O'/"$8W00A#$V("TD@G9/!1 :@&X'0 70
M!Y!S^&%G922#&!8CE"-A"Q/!(Y9I+3$T- % (N X,3@P`4 ,T"@C8B"J1@-A
M.@R#8@_@4QSPSG8)\ ?P%\!":0)@&@``6U--5% Z<W*B8BKR0&=A'/ N%B!\
M=%T8%2E0!F ","FW32D"(&1A';%-+E @, XQ%P`!T"BP(#@Z-241<4TLMU1O
M*;=40:!04B!76 8`< 60OP<Q&3 ", 20!Y %0$<#8,1U<"RX=6)J(\$IMTA;
M=W@`D&==!_!%U1D04@MQ(#)P=0$@)B^_)SHBY NV&",*XPJ /ADP_B<;P!TP
M&Q$%P!8`!4 '@6\$( /P&Q 94'DE(!\P8XP@:B!P)0%G(&(/P*)W">$@,2\5
MD# ;$/L?80.@,CR6&M$X]AL2'3"M"X M"K R<"T@47(><>LN$ EP( 6@;0M0
M.U L,?T;P'09< 6@`0`7``^!!('_0-(J< :!';$;H@1@"7 X]ODBX&ME&;%
MX0^ *G [\.4@<',><4EF0L,=TR\`>BX4$" +@ ]P!Y$$`"#\<&\$$"KS-6$`
M<#CV/V*_%P`Y<3CV.;4R<#M0:SJD&1HB8GD<\ 0@*'EUN&LA*4:@.?$M47(9
MP/L%L0= =RY0!" $\ = &@'_&7 ]1CCV&M(R< 6P):%*T$QH;4\`%Z$I+A@:
M0?\;L4#A)9!$40(@&P,N0!SQ?T$4&>(9DQL2"V R<1HI;[=%`!L6&!0\"< +
M@#Y/>_Y3!;!+P$A1&_% PQEA&I#Q'G$H3V@7``:0&3% @/<#H!F33F%P.: &
M\"+@.]%]405F"0`%L1?A3WL8%"WO*C1:SUO0)@99"& ;D#_R_PAP"7 ",%BR
M,Y $\CP`0,-K-),;D',9$'<&T!;@;*QS0$ B&>%R*G N0"'_&!0P8!G0`(!?
M-C6 "? ;P/\?@ )@'@%+@ # `Q% X1^A#2IP+323*! U-S W?$U (N R<$2P
M`9 10"XM!;!G&!H2`0!GP ```P`0$ `````#`!$0`````,`@!#_____0 `'
M,&#QTL';L[\!0 `(,&#QTL';L[\!"P``@ @@!@`````P ```````$8`````
M`X4````````#``* "" &`````# ````````1@`````0A0```````,`!8 (
M( 8``````, ```````!&`````%*%``"W#0```P`)@ @@!@`````P ``````
M`$8``````84````````>`"* "" &`````# ````````1@````!4A0```0``
M``0```X+C `"P`F@ @@!@`````P ```````$8`````#H4````````#`">
M"" &`````# ````````1@`````1A0````````,`*8 (( 8``````, ``````
M``!&`````!B%````````'@`X@ @@!@`````P ```````$8`````-H4```$`
M```!`````````!X`.8 (( 8``````, ```````!&`````#>%```!`````0``
M```````>`#J "" &`````# ````````1@`````XA0```0````$`````````
>'@`]``$````%````4D4Z( `````#``TT_3<``)FX
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

8. [wxsig] FW: "as-built" schematic (fwd)

```
From: John Koster <w9ddd@tapr.org>
Date: Tue, 2 May 2000 08:45:05 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81292-2000.05.02-08.47.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, had to forward this to my TAPR account because list is closed and
work email not subscribed.  Hope the attachment didn't get corrupted in
the process.

John Koster, W9DDD
<w9ddd@tapr.org>


---------- Forwarded message ----------
Date: Tue, 2 May 2000 08:43:12 -0500
From: "Koster, John" <jkoster@csw.com>
To: "'w9ddd@tapr.org'" <w9ddd@tapr.org>
Subject: FW: "as-built" schematic



John Koster, CEM
Sr. Project Manager
EnerShop
voice: 214-777-2423
```

fax: 214-777-3420
email: jkoster@enershop.com

> ----------
> From: Koster, John
> Sent: Tuesday, May 02, 2000 8:34 AM
> To: 'wxsig@lists.tapr.org'
> Subject: "as-built" schematic
>
> The attached is intended to document the way the first run of boards are
> built.
>
> The revised board layout will not be based on this, but it will be close.
> I will have to rebuild the SW5 in order for it generate a correct net list
> (won't really be visible on a printed schematic) and add add the extra 14
> pin (SIP) connector to the B rev schematic. Are there any other changes
> to the schematic before I get to re-doing the PCB layout? <<WXSTNaBD.PDF>>
>
>
> (replies to the list or w9ddd@tapr.org - not the csw.com/enershop.com
> address please)
>
> John Koster, CEM
> Sr. Project Manager
> EnerShop
> voice: 214-777-2423
> fax: 214-777-3420
> email: jkoster@enershop.com
>
[Attachment: WXSTNaBD.PDF; application/octet-stream; 51,217 bytes]

9. [wxsig] Re: FW: "as-built" schematic (fwd)

From: John Koster <w9ddd@tapr.org>
Date: Tue, 2 May 2000 11:58:27 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81365-2000.05.02-12.00.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a preliminary rev2 schematic and layout in process. I should be
able to upload in the next day or so.   It looks like the extra connector
is going to fit.

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] Re: FW: "as-built" schematic (fwd)

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 2 May 2000 13:24:21 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81368-2000.05.02-12.26.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Great John,

I am concerned on how to make a 1x14 connector? Will?

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of John Koster
> Sent: Tuesday, May 02, 2000 12:58 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: FW: "as-built" schematic (fwd)
>
>
> I have a preliminary rev2 schematic and layout in process. I should be
> able to upload in the next day or so.   It looks like the extra connector
> is going to fit.
>
> John Koster, W9DDD
> <w9ddd@tapr.org>

>
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Schematic, Rev 2

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 2 May 2000 20:32:01 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81432-2000.05.02-21.35.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

John: The schematic updates look good. They match my markups that I tried
to describe with text.

All: Other than the 1x14 header, is there anything else that we have
missed?

On the 1x14 header. I have seen at least a couple displays for sale that
had the flex strips still attached to them. I also finally looked them up
in the Digikey catalog (my standard reference for anything electronic--even
though they are expensive) and found several cables that fit the bill They
have precut flex circuits for soldering on either end and with connectors
pre-installed on either or both ends. They also have cable in spools for
$1.00 per foot. Seperate headers are available too. If Digikey has this
stuff, hopefully there are other places that will also have the same stuff
for more attractive prices.

All: After two weeks of bachelor life I pick up the wife and kids
tomorrow. Much better for family life, but WX stuff will by necessity slow
down a bit.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

12. [wxsig] RE: Schematic, Rev 2

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 2 May 2000 23:00:55 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81440-2000.05.02-22.03.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, tell us the part numbers of the cable and the connectors and let's see
how much they cost. Then I'll buy some samples to try them out. Then main
acheivement is that the connector needs to be simple, foolproof, and (as
much as possible) inexpensive.

Also, I'd like to look at Aaron's suggestion for the four push buttons from
Digi-Key. We need to design out the Jameco part except for its use as a
reset/debug switch.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of William Beals
> Sent: Tuesday, May 02, 2000 10:32 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Schematic, Rev 2
>
>
> Folks:
>
> John: The schematic updates look good. They match my markups
> that I tried
> to describe with text.
>
> All: Other than the 1x14 header, is there anything else that we have
> missed?
>
> On the 1x14 header. I have seen at least a couple displays for sale that
> had the flex strips still attached to them. I also finally
> looked them up
> in the Digikey catalog (my standard reference for anything
> electronic--even
> though they are expensive) and found several cables that fit the
> bill They
> have precut flex circuits for soldering on either end and with connectors
> pre-installed on either or both ends. They also have cable in spools for
> $1.00 per foot. Seperate headers are available too. If Digikey has this
> stuff, hopefully there are other places that will also have the
> same stuff
> for more attractive prices.
>
> All: After two weeks of bachelor life I pick up the wife and kids
> tomorrow. Much better for family life, but WX stuff will by
> necessity slow
> down a bit.
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Clock timing part 2

From: "Aaron" <ae4ko@amsat.org>
Date: Wed, 3 May 2000 09:04:22 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81497-2000.05.03-08.03.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a short one:

I put in the latest rev the other day in the hopes that timing would
improve (since the int routines were modified), but things haven't
improved much. I have noticed the hearbeat light is a bit irregular
at times with the new rev (I think that is the time when data
acquisition is happening?) Is this true, and if so, would errors on
the wind direction sensors cause this problem? I do have a
number of errors for direction (everything else is 0) but I attributed
that to the reed switches bouncing (when in light wind).

This might just be an aberration, but I'm running out of ideas on
what to test and it would be "nice" to find out what this is before a
final run.

Aaron

(Random Quote)
He's all sail and no boat.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] FW: APRS Protocol Specification: Third Draft

From: "Steven R. Bible" <srbible@gate.net>
Date: Wed, 3 May 2000 14:21:45 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81544-2000.05.03-13.23.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, you are no doubt interested in this.

- Steve

-----Original Message-----
From: bounce-picsig-6889@lists.tapr.org
[mailto:bounce-picsig-6889@lists.tapr.org]On Behalf Of Ian Wade
Sent: Wednesday, May 03, 2000 12:33 PM
To: TAPR PIC Development Special Interest Group
Subject: [picsig] APRS Protocol Specification: Third Draft

========================
APRS WORKING GROUP
APRS PROTOCOL REFERENCE
THIRD PUBLIC DRAFT
========================

The APRS Working Group has now published the third (and hopefully
final) public draft of the APRS Protocol Reference. It is available on
the TAPR website, at http://www.tapr.org/tapr/html/Faprswg.html.

This latest draft incorporates *hundreds* of items of feedback received
since the previous draft published last December, and has now grown to
115 pages.

Several sections have been considerably expanded and clarified. In
particular, the chapters on Mic-E, Weather Reports and APRS Symbols have
been substantially rewritten.

The Working Group invites feedback on the specification, although due to
the extensive public comments that we have already received on prior
drafts, we will not have a formal comment period as defined in the WG
charter; what we ask for now are additional eyes to ensure that we haven't
inadvertently introduced new errors to this draft. Comments should be
addressed to the TAPR "aprsspec" mailing list. Details of how to join
the list are given on page 2 of the document.

The cutoff date for feedback is midnight local time on Monday 15 May.
Then, depending on the amount of feedback received, the Working Group
hopes to publish the Final Approved version of the specification a few
weeks later.

John Ackermann, N8UR
Administrative Chair, APRS Working Group
2 May 2000

You are currently subscribed to picsig as: srbible@gate.net
To unsubscribe send a blank email to leave-picsig-6889M@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] RE: Clock timing part 2

From: William Beals <wmbeals@compuserve.com>
Date: Wed, 3 May 2000 20:45:38 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81593-2000.05.03-21.58.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron:

All I can suggest at this point is that you have a bad oscillator (which I think you have checked), bad connection between the oscillator and micro, or a bad micro. All are not very likely, but I suspect one of them is wrong. The fact that you are seeing irregular flashing of the LED clearly implies there is a clocking problem of some kind. The LED should flash regularly regardless of any data transactions. There is only one interrupt routine that both flashes the LED and initiates the 1-wire transactions. The only external force I can think of is that if you were getting massive 1-wire bus errors and that the 1-wire routines were unable to complete their chores before the next timer interrpt came along.

Do you only get irregular LED flashing when you are in the weather display mode? When not in that mode, the 1-wire bus is quiet and so would not interfere with the basic timer interrupt. That experiment would be quite telling in seeing if it is a clocking problem or a 1-wire problem.

Getting occasional 1-wire errors is normal. It is unavoidable when the wind direction sensors are wiggling around. I did make some improvements in error handling with the latest (1.08.2) software rev. Before I would get on the order of 0-5 errors in a typical day. With the new code, I havn't gotten a single error in 4 days. Based on some data from Russ C, I think I may not be handling MASSIVE (almost all data corrupted) errors very gracefully, but it sounds like your weather station is working reasonably well.

My final suggestion is to ask if you have a silly scope available to look at the 1-wire bus. If you do, try to see how high the 1-wire bus goes between bits and see how square the bit edges are. If it doesn't make it up to at least 4 volts, you may have some defective sensors or errors on the main board. If you don't have a silly scope, try measuring the 1-wire bus voltage while in the main menus. The bus should be quiet then.

Hope this helps.

will

-----Original Message-----
From: Aaron [SMTP:ae4ko@amsat.org]
Sent: Wednesday, May 03, 2000 7:04 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Clock timing part 2

This is a short one:

I put in the latest rev the other day in the hopes that timing would improve (since the int routines were modified), but things haven't improved much. I have noticed the hearbeat light is a bit irregular at times with the new rev (I think that is the time when data acquisition is happening?) Is this true, and if so, would errors on the wind direction sensors cause this problem? I do have a number of errors for direction (everything else is 0) but I attributed that to the reed switches bouncing (when in light wind).

This might just be an aberration, but I'm running out of ideas on what to test and it would be "nice" to find out what this is before a final run.

Aaron

(Random Quote)
He's all sail and no boat.

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(BP"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.`````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`@````4D4Z(%MW>'-I
M9UT@0VQO8VL@=&EM:6YG('!A<G0@,@"X"@$%@ ,`#@```- '!0`#`!0`+0`F
M``,`20$!(( #```X```#0!P4``P`4"$`& `#`"\!`0F `0`A````0S-#-3DY
M1#DR1C(Q1#0Q,4$X-38P,# P13@Y0C-#,#D`#0<!`Y &`*@+```A`````"P`"
M``$````+`",````````,`)@``````"P`I````````#`"X````````,`-@``````
M0 `Y`"# 2-1RM;\!'@!P``$````@````4D4Z(%MW>'-I9UT@0VQO8VL@=&EM
M:6YG('!A<G0@,@`"`7$``0```!8````!O[5RU$C9F<7$(2\1U*A6``#HFSP)
M```>`!X,`0````4```!33510`````!X`'PP!````%P```'=M8F5A;'- 8V]M
M<'5S97)V92YC;VT```,`!A"D[-0,`P`'$(D)```>``@0`0```&4```!!05)/
M3CI!3$Q)0T%.4U5'1T535$%45$A)4U!/24Y425-42$%464]52$%614%"041/
M4T-)3$Q!5$]2*%=(24-(251(24Y+64]52$%614-(14-+140I+$)!1$-/3DY%
M0U1)3TY"``````(!"1 !````A @``( (```M#@``3%I&=8][O\5W``H!`P'W
M( *D`^,"`&.": K <V5T," '$X<"@P!0#O9P<G$R#_8F?0J ",@@.PEO,C5F
M-0* "H%U8P!0"P-C`P!!"V!N9S$P,S/I#&!L;@(@90NF#_ *P)T"(#H*H@J$
M"H!!; ,@"$D@8P.1<W5G9TL'D 5 805 =&@$`"!\<&\+@ 5 &6$90!D1>24(
M8" /@'9E&0`@8G!A9"!O!/ #$ M@='D%L2AW&5 /<!@A&4%N+FL:: ]P!9!K
M"8 I+(L;$P6@;A8@8W1I`B#[&Q /P'<)X1DQ&N ;:0!P_1M ;1Q `V >$"!B
M&Q,@T_PN( _P& $*P!K@%@`%0$$:T')Y(&QI'=!L.GD>$74%0!@P&)!S<*\>
ML1M0%B ;4&8?DFT9XJIW%O%G(B%4'[%F`-"O&2(:12*2#[!E"X!G&>!:<@EP
M9Q7@"L%F"V!SAQRQ)^ E!"!,14080-QL90K (Z 9X&T+4 B0OQH"!) :X!EA
M&P`IX&\=P+LGPA% ;P)@)5$E`7,#<'L:X"O19"8%*:(HT A@;/L;0"BC("@E
M*C$H(0L1*?!O!!$E`0!P(T!D&1 ;`'3N<@!Q)H$>X7,F!"L4`B#/*C$DPAFQ
M!)!R=04Q`V#_(_ +@!K@&B,&X!E *)0JM'<IDR"2"X!I'M 9$#45,3XM`_ B
MH3#_'\$R@F5XW3,A;@= )F %L&,:X!@T_QRD)0$9]@:0&F,?4"*A&,#O`D G
MP@# !!!I&M$VY2/@_P0@,S$%L"M1(*$:(S:I,Z6[)9$K`G4Y("Q1&3!O'F'_
M*G$/P#0")[ %P ]P!; 'D?\?(#EA04,BP#C1&3 '<07 ?S,$!3$84"SQ!T E
MTA<Z1/] L!IR,G,[\2?Y*:(HIQP@_Q]Q)Q8+@!^3'U 9$"KQ,)"O! `+42-
M!&(_(C!72!+_(M)(TQD1!&(>$#:I/6(98?QQ=0B0&/$@H2S0): N,_M+!#,A
M9BL"`_ TD1^B&R#]`)!C0RLS828#&1$XT"1P_P40!X 9P4X4'R!-,D$R(Y#_
M(V GTAAQ)Z4ZD1G3*W\L@>\A4C;E+"5$RT<\!2NP&%!_`) "(#DQ-N4]I1EA
M%@!RM0# ;"(A21G30#%V&:#_,*! 8D@#20,M,4FQ"7 >Q/\/L " /=-/(QBP
M4X,6X4 P[RU2&#!)P""Q81W0+,0J8?\#8!K04A),\0.@/:,:H2"@#U.#3U<;
ML1C2*#$N,+ X+C(I+,$!@'<BDO4)<'8B(4)"1!@P3A1&4A\>\1^C"R!#824!
M,"TUYUG``Z PT7EP'$ Y,3"@^GDB(5=/9A8@!^ %H$OBTQ@P&K%N)P5 9R+@
M,R"_9^(`D!5P0'%AA$C1-&B2_3&B0BC "8!F$BS3,*,#4O<'\"10!"!#:A(<
MI!@P`, /(T BTE+!8>=-05-3^$E611P`!T $8!CB& '_,*,%H3-2'>$]EB,3
M"< `T/\!$!7@(Z94H2S07R$$("-B_QIB!<!)1AC@&1 >XB6"!;#_*],)<"C
M61$"8"- 'U 8`/5$RTTC0&8+@#DQ&)5VQ?] H2C '. [-1JU`)!T,1B ]P6@
M)' 9``8+< M@0&4)`+YO'. ^?#UA6M([1&0A$=\W4"- 0*$GD1J@;P?@&5"^
M9T^$//EJP$(#'T1B-B#[/?2 =G--0"*23Z-4H0F _QC!(H)_)%2A?\ 'D&J"
M7^/_5*$S8'K3!4 I\1CA;%!;D/YL82 >$!IR;X(:LVUT`1#_'K*)0EVU!;$]
MI68E`,!(T?\&X L1?RIJ@GO/2_(C,0> WRC "'$GT4PMB#)A&,!'\?\#$$BW
MB_-2$7\#)C(]8BX5UU+$1F$?H6Y$RTA\LAE#^1V@;' QH!<Z`_ 8`!<ZYY>^
M"S C8#,V`4 5$ % #RPA,R >P!"$,38@+=6:TD\%$&=YLTTO\9#A/YK3%S:9
MY)FQ"Q.9YFDM&#$T- % (V Q.##``4 ,T)YS8B!&`V$7( 4,DF(6M2!;4TU4
M`% Z864T:V] ST0P,3!1( 6P9UT7-9^@]P9@`C"@!U<)@#^A:*$>$#Y-2A$5
MH!X0`="?`" W)#HP;%!!3:)75&^AH =405!22J!8!@!?)'$',1@@,Q(8TD<S
MH7 QHEAU8FH>L: '6W?^> "0HC!NH%4R0R(KXPK _05 ,IQ_G8J9- NV%T,*
MX_\*@"8P&6%4TRX1J\$6$1<K_1@P<'22'X1C!621'Y1)=/]*$4C5+B D<!H%
MJS5.%!<T_V"%' !K43F1'Z(9LC]<!&'?!I (D!WS(_$<HF>5T1K![VJ"M<L@
ML12 :%]3&K,BT?\<0&T1M ,J`1\@AX*!`52U?X3"* @7-+3$/[)I&K*R*'\<
MACKD-21#,D?T,*._!6/O34$`D':V#X!P)' #`!5P_C]CX!@@&@(9\C-02_$U
MMP_\LLAX03A2+&!<T7']=B!A0_R10E84L)4J!7X% L!JU%S3_DF &T&;$/:4Y
M8<C9' !DH+<C(;EC.,!LRC$983!CX/<CY!D0-U!I(^%M$<?V&1+_0+ ?H@G1
M3<%/41V10A%?$7\;@"?1'!$?<4C1O73(DBGO1,NO<R#0O9)J)%!OXP.1[P&@
M,S%VHR/%)R5@,U >D/\H\R/Q.H(!`"C Q[@<(-%UMQC3-=)222(#`#F0(D"2
M_WFA&T$C\=H4KX5"-<,F>:2?V#%$RQ;3%S2<1RA2()$I;C%1=9GQ*93U92?_
M5.$8`3$P`Q$@DA8`C#)1(.N7O^#862<E8PAP"7 ",/]\8JE@!/(?(#XQ3?&J
M<GL!SCHEH,R1!T!S0$#2RB'Z<AK0+D#1KQ5 L$ PYR?_79(;0!L!%5$<X"50
MXU)]DA\J`!K0-O"J<IY@-3<P^#=-0"-@&. QH &0$4 7H@(7.A(!`._ `P`0
M$ `````#`!$0``````,`@!#_____0 ``,*#!YQYQM;\!0 `(,*#!YQYQM;\!
M"P``@ @@!@`````P ```````$8`````X4````````#``* "" &`````#
M````````1@`````0A0````````,`!8 (( 8``````, ````````!&`````%*%
M``"W#0```P`)@ @@!@`````P ```````$8``````84````````>`"* "" &
M``````# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````
```

```
MP `````$8`````#H4````````#`"> "" &``````# ````````1@`````1
MA0````````,`*8 (( 8``````, `````!&`````!B%````````'@`X@ @@
M!@``````P `````$8`````-H4```$````!`````````!X`.8 (( 8``````
M`, `````!&`````#>%```!`````0`````````>`#J "" &``````# ````
M````1@`````XA0```0````$`````````'@`]``$````%````4D4Z( `````#
)``TT_3<``&]T
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

16. [wxsig] RE: Schematic, Rev 2

From: William Beals <wmbeals@compuserve.com>
Date: Wed, 3 May 2000 20:52:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81594-2000.05.03-21.59.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve:

All the .1" stuff is on page 30-31 of my April-June Catalog (available online at http://www.digikey.com)

A 4-inch stripped cable is $1.79 (Q-100)
A 4-inch cable with connectors on both ends is $4.86 (Q-100)
Bulk cable is $28 for a 25-foot roll, but you'd have to get special tools to cut and strip it.

I personally prefer the eio.com solution over the flat cable above, but at least it is available.

will

-----Original Message-----
From: Steven R. Bible [SMTP:srbible@gate.net]
Sent: Tuesday, May 02, 2000 9:01 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Schematic, Rev 2

Will, tell us the part numbers of the cable and the connectors and let's see
how much they cost. Then I'll buy some samples to try them out. Then main
acheivement is that the connector needs to be simple, foolproof, and (as
much as possible) inexpensive.

Also, I'd like to look at Aaron's suggestion for the four push buttons from
Digi-Key. We need to design out the Jameco part except for its use as a
reset/debug switch.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of William Beals
> Sent: Tuesday, May 02, 2000 10:32 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Schematic, Rev 2
>
>
> Folks:
>
> John: The schematic updates look good. They match my markups
> that I tried
> to describe with text.
>
> All: Other than the 1x14 header, is there anything else that we have
> missed?
>
> On the 1x14 header. I have seen at least a couple displays for sale that
> had the flex strips still attached to them. I also finally
> looked them up
> in the Digikey catalog (my standard reference for anything
> electronic--even
> though they are expensive) and found several cables that fit the
> bill They
> have precut flex circuits for soldering on either end and with connectors
> pre-installed on either or both ends. They also have cable in spools for
> $1.00 per foot. Seperate headers are available too. If Digikey has this

> stuff, hopefully there are other places that will also have the
> same stuff
> for more attractive prices.
>
> All: After two weeks of bachelor life I pick up the wife and kids
> tomorrow. Much better for family life, but WX stuff will by
> necessity slow
> down a bit.
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(CD"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`A````4D4Z(%MW>'-I
M9UT@4D4Z(%-C:&5M871I8RP@4F5V(#(`2 H!!8 #``X```#0!P4``P`4`#0`
M. `#`&(!`2" `P`.````T <%``,`% `P`"$``P!``0$)@ $`(0```$0P0S4Y
M.40Y,D8R,40T,3%!.#4V,# P,$4X.4(S0S Y``L``0.0!@"$"P``(0````L`
M`@`!````"P`C```````#`"8```````L`*0```````P`N```````#`#8``````
M`$ `.0`@"D[9<[6_`1X`< `!````(0```%)%.B!;=WAS:6==(%)%.B!38VAE
M;6%T:6,L(%)E=B R``````(!<0`!````%@````&_M7/93MF9Q=$A+Q'4J%8`
M`.B;/ D``!X`'@P!````!0```%--5% `````'@`?# $````7````=VUB96%L
M<T!C;VUP=7-E<G9E+F-O;0```P`&$/B&:S$#``<0"PD``!X`"! !````90``
M`%-4159%.D%,3%1(13$B4U151D9)4T].4$%'13,P+3,Q3T9-64%04DE,+4I5
M3D5#051!3$]'*$%604E,04),14].3$E.14%42%144#HO+U=75T1)1TE+15E#
M3TTI030M24Y#2%,``````@$)$ $```!<" ``6 @``)X.``!,6D9U. %AV7<`
M"@$#`?<@`J0#XP(`8X)H"L!S970P( <3AP*#`% .]G!R<3(/]B9]"H (R" [
M"6\R-68U`H *@75C`% +`V,#`$$+8&YG,3 S,VD,8&QN`B!E"Z8&``1P979E
M.@JB"H0*@$$"; ,@=&AE("XQH"(@<W1U`2 @! `J( (@( JP9QA0,S"8+3,Q
M&3 8\&UY#_ C$4 #$"U*=18@($,&80&0"0!G("AA=M\+< M@`F 84 (@; N
M&% G&T #,!7@(&@"0' Z""\O=QVP+F1I9Z!I:V5Y+@6@;175Q" I%SL@-"T+
M@ ]PRQBA!1%P"8 @8QP3&1$@)#$N-SD;H%$M_160,!\E'_<A% /P&# A`/,"
M(!8@8W0%L!DC!N CX0T)\&0$("%R-"XX-A4A_$(5X&LA"3(X(-,"$ 7 82 4
M`"T"$"4`5B #8!@`+"3@=05 >3T(8"<@\ ^ %P`8(&\@ZQF0!4!S(-!C!S$J
M,0;P^P0@*D%C*6$`<"#P((,9`+1T+A<Z21E@!)!S`B!]!T!L&F 10 $0!) 8
M(V7\:6\>8AB@!O I8"\@`Z#V;Q<`+K1F"V %0"$4`:#O,"$I-!S1'#!A&+ L
MD1D"?QO'+,L#\!@`%SH*]!R ,_XV`4 5$ % $4 E`"11$(3J,28`+3=B3P40
M'A N`?L%T >0<QF!-V,7-C9T-D'+"Q,V=FDB(#0T`4 <@!PQ.") #,$[`V(@
M1C<#81<@#))B%K4#H%(N""!":1PB6U--5"!0.G-R8CW20&?G&T S@!8@=%T7
M-3PP!F +`C \EU0*4'-D87G%*3!-04 @,#(I, '0(2) (#DZ,!H`4$T)/Y=4
M;T!H05!2(.Q76 8`*L5)`C $D >0)05 1P-@=7 _F'5B1FHD43R76W=X`)!G
MLET'\$4Z!@`/<&4`P/4OT&,I,%(6\"A@.0\Z&M\UQ NV%T,*XPJ 5S1Q*3![
M%N 8`74K<1A!"K$%0&[^=0;0+<$:$A@R,04L$4[#YR0H+ (<,'0G!" /L!8P
MZ1=#:&\'X&T4@"!@&#%_&F %H!BP/:! X!A `Z!)?B<8`2E0&F MX > &*!A
M_FT+4 >1*D$@D!I@&#$O<'\(8%+7`, +@1=#`- 80&G_%P`'@ (P&0(8,!S1
M3ZM.`/\)X"5A*D%.0!B@!W!4<2DP_2BA;#9A&B I,"P"&[ /0'\70U(#,F 9
```

```
M8%*P`) <(2G[&0`6('@@T "!%P`LRQ?P?RW@*3!38%"Q'B$J,@D`;SLG(!S1
M00K `B!1`G5G_QF0&+ OXB@2,',(81E@35"_(& I421P!C$#4A<T1!X!["U+
M'D%2\%<84%CR*C+?`0!'H3 !*6$8,DI44 61\TVT7/!C904Q*!(CT 0@OTU0
M'+$RX1<T14$/P"\!`+<I4!N0`^%T#W LRRT6Q/LTK@J /C=?.&YKP#Q3).$;
M&O!FD"U'@R(@-3 US#E '( 8L',N`9 10.HN!;!G:V9;%0,=$58QFFPD<#IN
M;V]^74\+D%<V(AZU/;!E#X!L&/!/_QCP3*(',"]P=0`'0%M%:\#/0"- [T'T
M%9 Z,Q%P0J;_:\!#44/_10]VI$:%1V=(/\]K='YL/$ &\&MS%R5_-_!*;VAN
M2!!3`AB@?7:]34!P=Y 6X 0@7W-G*+!^9%+D&F!]H2!1&E$`P'+^:T7 =F=7
MPRV0()$)@(3WWV2C!0%9@2/#%N!X++9_-WL7\8%13Q@Q+K(#D1@R,?\[T1TP
M,E $@2DP5Y-[(2OQ?GD8, N &Y!-$&=Q5\-WMQA0*?)K9FT$`0F /W[=_W00
MB@Y2X2V0*?-1,0.@,A=_*% %H$7 '#$=\"JP"V!Y_V*A!;$X<!PQ5\)K9@^
M3X3_,+!<\"!T41$OT!@!&T !D/]]<61S53*04W9!*E ZT"X#_VMF7W)D8E5"
M>[@+@!@C8V+_'C$A`1M5&E$8L"P!"Q$HX/\N@@GP9I H!(O%:V9-$"11OV 1
M2*!KX#U"A/@(8&=2-?\*P"[Q709<L"P"8:$L$A;Q_G(K`2$35Z4ZT%?S:V8^
MH/\8`8.3D\@J$2YA*\*4PRK@_G(KP&<BDO,&\ 2!C (90?\O$(ES)4$K\R/-
M:V8N82 A_YN!& `@X:>8!;$D]X-VES/_*?,A%0.@*K K0R@1:V8AH?]"(2VQ
M6B)2T@9@+;$_$8J5_S+ABX(;URLQD%(8\)I&#X!_36($`&MF&+,I,%' (-!F
M_Q7@+C&+58N!)0$NH0M19I#_5Z4T8JS9HTE4050A&,)K9O\H$@1@BX("0*(`
M)&!7$2Y1;TB@!Y"(#XD300& +J)WVRI0C.!E?_ :$F)6T@D!]U[A+I"%L7!(
MH"<@1< 8(^<#\+ZQ+ )K:25@ACBZ$?<#8!W04O!-4A).0 ) KZ/_K[%44 ,0
M&F"^DBDT>D$8M/VW$V*7YR1!;-$CT%/1"0#Z=VMF9%'0D2&CX8?_-&C_?S=K
MX\G/RM_+[VU94Q 9$7\'@3AR42%784U0C (B,271G %C>6.JPD6>!79G_"A-
M"X '<$X@&;'/8%PQ_'0M)!%@< > !< D$1;@_P(P'R7);]2_U<_,CVO 3*+M
M=AQW3C%V04 ><6'Q!)!?76$><FMU<L&*<44R8DE_=Y!1P$*0MF*(APAP!;!A
M$2DP0T\@.X$Q,BT<-#<[(6MU&< S+3?U%! M0< Y%<!^?\C<:V;^60A@H",K
MP,%00#$N,6!P_F*'!&1S1X-;\4@0/HYY./]-0-)AXT7.<JA1). 542<@/WV1
M`Q%?0C)0%P!R5S<P_#=-;X_@'VK[.-?B#^,?_^0FV3_:2>8OYS_H3^E?<%8+
M%S02`0#VT ,`$! ``````P`1$ `````#`( 0_____T `!S# K+<\<[6_`4 `
M"## K+<\<[6_`0L``( (( 8``````, ```````!&``````.%`````````P`"
M@ @@!@``````P ```````$8`````$(4````````#``6 "" &``````# ````
M````1@````!2A0``MPT```,`"8 (( 8``````, ```````!&``````&%````
M````'@`B@ @@!@``````P ```````$8`````5(4```$````$`````."XP``L`
M)H (( 8``````, ```````!&``````Z%`````````P`G@ @@!@``````P ``
M``````$8`````$84````````#`"F "" &``````# ````````1@`````8A0``
M``````!X`.( (( 8``````, ```````!&`````#:%```!``````0`````````>
M`#F "" &``````# ````````1@`````WA0```0````$``````````'@`Z@ @@
M!@``````P ```````$8`````.(4```$````!``````````!X`/0`!````!0``
3`%)%.B ``````P`--/TW``!!3H4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

17. [wxsig] Re: Clock timing part 2

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 03 May 2000 23:15:13 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81636-2000.05.04-00.16.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron wrote:

> I do have a
> number of errors for direction (everything else is 0) but I attributed
> that to the reed switches bouncing (when in light wind).
>

The reed switches in the 1-wire wx station do not bounce. This has to do
with the magnetic field in the switch gap and the fact that the reeds are
made out of magnetic material. Some time ago, I sent around a message from
Dan Awtrey of Dallas Semiconductor that explained this. If you'd like,
I'll see if I can find it.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] RE: Clock timing part 2

From: "Aaron" <ae4ko@amsat.org>
Date: Thu, 4 May 2000 09:15:17 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81660-2000.05.04-08.15.06--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

> Do you only get irregular LED flashing when you are in the weather
> display mode? When not in that mode, the 1-wire bus is quiet and so
> would not interfere with the basic timer interrupt. That experiment
> would be quite telling in seeing if it is a clocking problem or a
> 1-wire problem.

I'll look again when I get home. (I do have a scope, so I'll look at
the waveforms, too.)

>
> Getting occasional 1-wire errors is normal. It is unavoidable when
> the wind direction sensors are wiggling around. I did make some
> improvements in error handling with the latest (1.08.2) software rev.
> Before I would get on the order of 0-5 errors in a typical day. With
> the new code, I havn't gotten a single error in 4 days. Based on some
> data from Russ C, I think I may not be handling MASSIVE (almost all
> data corrupted) errors very gracefully, but it sounds like your
> weather station is working reasonably well.

Well, it sounds like massive errors then (I don't think I have ever
seen it go below 30 in a 5 min period.)

>
> My final suggestion is to ask if you have a silly scope available to
> look at the 1-wire bus. If you do, try to see how high the 1-wire bus
> goes between bits and see how square the bit edges are. If it doesn't
> make it up to at least 4 volts, you may have some defective sensors or
> errors on the main board. If you don't have a silly scope, try
> measuring the 1-wire bus voltage while in the main menus. The bus
> should be quiet then.
>

I did use fresh CAT1 wire, about 20 feet at most. I might try some
CAT4 which has more twists if I find there is a level problem with
the signals.

> Hope this helps.
>
> will

(Random Quote)
FOR SALE: Programming manuals. Must C to appreciate.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

19. [wxsig] Re: Clock timing part 2

From: "Aaron" <ae4ko@amsat.org>
Date: Thu, 4 May 2000 09:17:12 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81661-2000.05.04-08.16.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Aaron wrote:
>
> >   I do have a
> > number of errors for direction (everything else is 0) but I
> > attributed that to the reed switches bouncing (when in light wind).
> >
>
> The reed switches in the 1-wire wx station do not bounce. This has to
> do with the magnetic field in the switch gap and the fact that the
> reeds are made out of magnetic material. Some time ago, I sent around
> a message from Dan Awtrey of Dallas Semiconductor that explained this.
> If you'd like, I'll see if I can find it.
>
> Russ

Yes, you are correct. "bounce" is probably not the best word to
use. oscillate may be better. In playing with the unit before putting
it up, I could hear the reed click when moving the vane, and if I got
it in the right place, it would "oscillate"   -- not a bounce, yes. but
very annoying to anything trying to determine state <grin>

Aaron

(Random Quote)
2400 Baud makes ya' wants t' git out and push.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

20. [wxsig] Running a quart low...

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 4 May 2000 21:57:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81840-2000.05.04-23.01.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Donated blood today, running a bit low.

Aaron: If you are getting 30+ errors in a five-minute period, something is seriously wrong with the 1-Wire communications. Hopfully the scope or multi-meter will give you a hint as to what is going on. Note that the error counters roll over at 64.

Aaron: Some of the 1-Wire issuesd Russ ran into were related to the sensor board messing with the 1-wire bus. I'd wait and see what the signal looks like before you go to the effort of swapping cables out. Remember that I'm using 100 feet of regular straight telephone cable, no twisting or nothing. Cable quality (as long as the connection is good) shouldn't matter too much for the wire lengths you are running.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] Re: Running a quart low...

From: "Aaron" <ae4ko@amsat.org>
Date: Fri, 5 May 2000 09:53:23 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-81925-2000.05.05-08.53.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Folks:
>
> Donated blood today, running a bit low.

Let us know if you get the urge to sleep upside down in a dark cave...or if garlic makes you sick. ;-)

>
> Aaron: If you are getting 30+ errors in a five-minute period,
> something is seriously wrong with the 1-Wire communications. Hopfully
> the scope or multi-meter will give you a hint as to what is going on.
> Note that the error counters roll over at 64.

Not knowing what it should look like, I don't know if what I saw was bad or good. Quiet bus voltage is around +5V which I know is good. <grin> The transition from +5 to 0 is nice and sharp, and takes about 2us (at most). The transition from 0 to 5V is decidedly more round, but it didn't look particularly _bad_ either. To get to 4V takes 4us, and maybe another 4us to rise to 4.75V.   The smallest pulse I saw was about 10us in duration and 50-60us was

typical.

Do you guys have the spec handy to relate these observations into
something a bit more meaningful?

>
> Aaron: Some of the 1-Wire issuesd Russ ran into were related to the
> sensor board messing with the 1-wire bus. I'd wait and see what the
> signal looks like before you go to the effort of swapping cables out.
> Remember that I'm using 100 feet of regular straight telephone cable,
> no twisting or nothing.
> Cable quality (as long as the connection is good) shouldn't matter
> too
> much for the wire lengths you are running.

I stated the cable stuff just to provide a baseline for
troubleshooting. What I didn't mention was that I have the wx
cable running up the same pole as the 9913 for the radio/antenna,
but that shouldn't affect this either. I have noticed that the past
night or two the winds have been very still overnight and the errors
have gone down. (10-12 in 5min).

Aaron

(Random Quote)
I'd rather learn from somebody *else's* mistakes!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

22. [wxsig] FW: Announcing the APRS DECODER

From: "Steven R. Bible" <steveb@dandin.com>
Date: Sat, 6 May 2000 22:26:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82127-2000.05.06-21.29.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: bounce-picsig-6889@lists.tapr.org
[mailto:bounce-picsig-6889@lists.tapr.org]On Behalf Of Ian Wade
Sent: Saturday, May 06, 2000 1:15 PM
To: TAPR PIC Development Special Interest Group
Subject: [picsig] Announcing the APRS DECODER

==========
ANNOUNCING "APRSDEC"
THE FULL APRS DECODER PROGRAM
by Ian Wade, G3NRW
6 May 2000
==========

While working on the APRS Protocol Specification, I found it useful to write
an APRS
Decoder Program (APRSDEC) to verify the details of the protocol.

APRSDEC parses APRS packets in IGate output format, and produces a full
decode of all
elements of each packet. This will be particularly useful for APRS
developers/testers, and
also for people who need/want to know more about the protocol, or who want
to check out
their own packet formats.

Among the more obscure formats, APRSDEC fully understands Mic-E, compressed
positions and
area objects (circles, triangles etc).

Here is an example of APRSDEC output:

~~~~~~
~~~~~~~~~~~~~~
APRSDEC. APRS Packet Decoder.
Version 1.0.1b (5 May 2000)
by Ian Wade, G3NRW (g3nrw@arrl.net)

```
Runtime     = 06-May-2000  16:13:21
Input file  = examples.log
Output file = examples.out

NOTE: If this report contains anything that you think is incorrect,
      please email it to g3nrw@arrl.net for investigation. Thank you.

------------------------------------------------------------
Record # 1
# EXAMPLES.LOG

------------------------------------------------------------
Record # 2
WA3SFJ-1>APRS:!3938.16NR07604.26W#PHG3533/CBRA Relay Digi
 APRS Data Type= Posit w/o time. No APRS
 Lat= 39 deg 38 min 10 sec N    Long= 76 deg 4 min 16 sec W
 Icon= Star (green)   Overlay= R
 Power= 9 watts  Ant Height above average terrain= 320 ft  Gain= 3 dB
 Range= 24 miles  Directivity= South East

------------------------------------------------------------
Record # 3
KD6VZQ-1>APRS,TCPIP,KF6QHT*:@270500z3724.66N/12205.51Wj118/000/Mic-E/M4/Comm
itted>
 APRS Data Type= Posit w/ time. With APRS
 Day=27 Time=05hrs 00mins UTC
 Lat= 37 deg 24 min 40 sec N    Long= 122 deg 5 min 31 sec W
 Icon= Jeep   Overlay= (none)
 Course= 118 deg  Speed=  0 knots ( 0 mph)

------------------------------------------------------------
Record # 4
KD6VZQ-1>3WRTVX,WR6ABD,W6CX-3*:'2]Pl!.j/]"4.}
 APRS Data Type= Current Mic-E data
 Radio= Kenwood TM-D700
 Message= /M4/Committed
 Lat= 37 deg 24 min 41 sec N    Long= 122 deg 5 min 31 sec W
 Icon= Jeep   Overlay= (none)
 Course= 118 deg  Speed=  0 knots ( 0 mph)
 Altitude= 23 meters ( 75 feet)

------------------------------------------------------------
Record # 5
G3NRW>3WRTZZ*:'2]Pl!.j/]"4.}
 APRS Data Type= Current Mic-E data
 Radio= Kenwood TM-D700
 Message= /M4/Committed
 Lat= 37 deg 24 min 0 sec N    Long= 122 deg 5 min 0 sec W
 ** WARNING: POSITION AMBIGUOUS to the nearest minute
 Icon= Jeep   Overlay= (none)
 Course= 118 deg  Speed=  0 knots ( 0 mph)
 Altitude= 23 meters ( 75 feet)

------------------------------------------------------------
Record # 6
WB4APR>APRK11,W5RRR,RELAY,RELAY:;MOVIE    *270138z/:iT!;.C!E{*!Friday Night
 APRS Data Type= Object
 Object Name= MOVIE     (Live)
 Day=27 Time=01hrs 38mins UTC
 Lat= 38 deg 57 min 58 sec N    Long= 76 deg 32 min 56 sec W
 Icon= Eyeball   Overlay= (none)
 Pre-Calculated Radio Range= 4 miles
 GPS Fix= Old    NMEA Source= Other   Compression Origin= Compressed

------------------------------------------------------------
Record # 7
G3NRW>APRS:;ATLANTIC *012345z0023.45N\00034.56El6201310{10}
 APRS Data Type= Object
 Object Name= ATLANTIC  (Live)
 Day=01 Time=23hrs 45mins UTC
 Lat= 0 deg 23 min 27 sec N    Long= 0 deg 34 min 34 sec E
 Icon= Area Symbol   Overlay= (none)
 Object Type= Line (Type 6)     Object Color= Violet (low intensity)
 Corridor=  10 miles either side of line
 yy offset= 4 deg down   xx offset= 1 deg left
 Offset Posit:   Lat= 3 deg 36 min 33 sec S    Long= 0 deg 25 min 26 sec W

------------------------------------------------------------
```

```
Record # 8
VE6CPK>APW245,TCPIP*:_04270500c035s000g001t045r000p000P000h00b10279wDAV
 APRS Data Type= Weather stn (w/o posit)
 Month=Apr Day=27 Time=05hrs 00mins UTC
 Wind Direction= 35 deg  Wind Speed= 0 mph  Gust= 1 mph
 Temp= 45 degF  Rain last hr= 0 in.  last 24hrs= 0 in.  since midnight= 0
in.
 Humidity= 100 %  Barometric pressure= 1027.9 millibars

------------------------------------------------------------
Record # 9
HL5BHH-9>APRS,WIDE:$GPRMC,050012,A,3508.544,N,12901.328,E,000.0,161.0,270400
,006.9,W*63
 APRS Data Type= Raw GPS Data
 Month=Apr Day=27 Year=00    Time=05hrs 00mins 12secs UTC
 Lat= 35 deg 8 min 32 sec N    Long= 129 deg 1 min 19 sec E
 Icon= Car   Overlay= (none)
 Course= 161.0 deg  Speed= 0 knots ( 0 mph)
 Status=Valid   Mag variation=006.9W

++++++++++++++++++++ END OF INPUT FILE ++++++++++++++++++++++


~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~


With a few unimportant exceptions, APRSDEC understands all of the APRS
features included
in the Protocol Specification. As an extreme example, look at Record #7
above. This draws
a line object with a 10-mile corridor either side, and is carefully
contrived to cross
both the Greenwich Meridian and the Equator -- the offset posit shows the
position of the
end of the line, in the opposite latitude and longitude hemispheres.

APRSDEC even recognizes Kenwood TM-D700 radios, and corrects the posit to be
a *current*
posit rather than an *old* posit. Position ambiguity (Mic-E and uncompressed
lat/long) is
also handled correctly.

APRSDEC includes extensive error reporting, showing for example when a
parameter is out of
range, or in is the wrong format, or (in the case of NMEA sentences) where
there is a bad
checksum.

APRSDEC is now available at http://www.netro.co.uk/aprs.htm

This is the first publicly released version, and I would welcome any
feedback, especially
if you find any errors.


73
Ian, G3NRW
Technical Editor, APRS Protocol Specification
                     ********* Third draft now available *********
--
+-----------------------------------------------------------------+
| APRS on 144.800  [IO91SX]         ~55km/35 miles NNW of London  |
|                     email: g3nrw@arrl.net                       |
|                                                                 |
| APRS PROTOCOL SPEC:   http://www.tapr.org/tapr/html/Faprswg.html|
| APRS DECODER:         http://www.netro.co.uk/aprs.htm           |
+-----------------------------------------------------------------+

---
You are currently subscribed to picsig as: srbible@gate.net
To unsubscribe send a blank email to leave-picsig-6889M@lists.tapr.org



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

23. [wxsig] WXSIG is no an open list

From: "Steven R. Bible" <steveb@dandin.com>
Date: Sat, 6 May 2000 22:28:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82128-2000.05.06-21.30.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gang,

I've opened WXSIG to public.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] Re: Running a quart low...

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 6 May 2000 21:12:58 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82142-2000.05.06-22.20.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron:

Your description of the waveform sounds like it is a very well-behaved interface. Here is a picture I took for Russ a few weeks ago. The scale is 250us per division, so it isn't really showing the slopes well, but it does sound like your waveforms are basically square.

For any 1-Wire specs, go to http://www.ibutton.com and from there you can download the specs for any of the 1-Wire devices. At the back of nearly every device spec is the required timing parameters. From your descriptions, it sounds like you basic communications is OK though. You may want to make sure you look at a lot of data just to make sure that you are looking both at data that is being sent by the T238 as well as data coming back. All transactions start with the T238 board sending an address (as in the picture above), and data coming back can be many bytes later.

The 9913 cable _should_ be fine. You may want to try a test where you have the weather station on your bench away from the 9913 cable (or unplug whatever drives that cable) to make really sure.

I may be trying something similar to you soon. I didn't have a good place to put my weather station on the roof as I had nothing to attach a pole to. Since they installed the satellite internet dish on the roof, I now have a vertical pole I can attach my weather station too. Trouble is that I will be running cables behind a dish that is having one watt of 14GHz plus being broadcast at it. At those frequencies, one watt is a lot. The installer said he accidentally got in front of a dish when it transmitted. He got an instant headache and spots in his vision for about twenty minutes. Scary stuff!

will

-----Original Message-----
From: Aaron [SMTP:ae4ko@amsat.org]
Sent: Friday, May 05, 2000 7:53 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Running a quart low...

> Folks:
>
> Donated blood today, running a bit low.

Let us know if you get the urge to sleep upside down in a dark cave...or if garlic makes you sick. ;-)

>
> Aaron: If you are getting 30+ errors in a five-minute period,
> something is seriously wrong with the 1-Wire communications. Hopfully
> the scope or multi-meter will give you a hint as to what is going on.
> Note that the error counters roll over at 64.

Not knowing what it should look like, I don't know if what I saw was bad or good. Quiet bus voltage is around +5V which I know is

good. <grin> The transition from +5 to 0 is nice and sharp, and
takes about 2us (at most). The transition from 0 to 5V is decidedly
more round, but it didn't look particularly _bad_ either. To get to
4V takes 4us, and maybe another 4us to rise to 4.75V.   The
smallest pulse I saw was about 10us in duration and 50-60us was
typical.

Do you guys have the spec handy to relate these observations into
something a bit more meaningful?

>
> Aaron: Some of the 1-Wire issuesd Russ ran into were related to the
> sensor board messing with the 1-wire bus. I'd wait and see what the
> signal looks like before you go to the effort of swapping cables out.
> Remember that I'm using 100 feet of regular straight telephone cable,
> no twisting or nothing.
> Cable quality (as long as the connection is good) shouldn't matter
> too
> much for the wire lengths you are running.

I stated the cable stuff just to provide a baseline for
troubleshooting. What I didn't mention was that I have the wx
cable running up the same pole as the 9913 for the radio/antenna,
but that shouldn't affect this either. I have noticed that the past
night or two the winds have been very still overnight and the errors
have gone down. (10-12 in 5min).

Aaron

(Random Quote)
I'd rather learn from somebody *else's* mistakes!

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 MVC-001S.JPG
M_]C_X `02D9)1@`!`0```0`!``#_VP!#``@&!@<&!0@'!P<)"0@*#!0-# L+
M#!D2$P\4'1H?'AT:'!P@)"XG("(L(QP<*#<I+# Q-#0T'R<Y/3@R/"XS-#+_
MVP!#`0D)"0P+#!@-#1@R(1PA,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R
M,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C+_P `1" '@`H #`2(``A$!`Q$!_\0`
M&P```04!`0`````````````````@`!`P0%!@?_Q !3$ `!`P($`P0&! <-!P,$
M`P`!`@,1``0%$B$Q!A-!(E%A<10R@9&AL14C0L$E,U)B<K+1!Q8D-#5#4V."
MDJ+A\"9$5&1S=-(VPO&#E+/B1823_\0`&0$!`0$!`0$``````````````````$"
M`P0%_\0`)!$!`0`"`@(#``,!`0$`````````$"$1(Q(4$#$U$R0F$B@03_V@`,
M`P$``A$#$0`_`/$$B4GRH4&$Q4C8[)\J'+V:QBUD23K4@)F:!(JPS;EXD)(G
MQKI)MG>@@^^B'E4Z;)1U+C8\,U2HL%K]1QLQ^=6N%8Y14!BBF8J^,(>*<V9,
M1)UIF<-#JLB7VBKNS4^O).>*G1"M5.!+(_&)G;K1IP(D`EX3X UKZLD^S%D3
M/04\D 5M# `9^NT\J/\`>^W_`$RI\J?74^W%A@ZQ-*01X5T`X>9(@O+]PJ0<
M.VH':==]D5?KJ?9'. T5=(GAZU)U<=]XHAP_9 &5O$1^4/V4^NE^2.9!$ZTX
M,G_.MI-GADP"^H@D*A0,1W]U6F,(P]]H%/.!ZA2@#4XIRCG)TD4\^ZNG&!V(
M)[+G][_*DG!;*8RK_O5K@G..8F-(HP=*Z@8-8@F$*,_G4_T/9)U#1\Y-.*<X
MY82?*G KI_HBS(_%'^\:0PFSC\2/>:<4N4<SO3G3I73)PNTZM;>)IOHVT$0R
M/C3BFXYH&3K3@P1%;EVS96C)<6T!`T'?\:QCB3>R;5!'22:EDAYO1M]A-.-O
M\JV+$6EX@$(2#&HJP[:VS++BRT(2)%:XFW/[:=U,=:UV&2E4/LM *U"D3\:D
M8]#>=6A"4%23%3BC$T(-(F :WT,6CCA0$I*ATFDTBR<?Y:2V52= JFC;GU =
M)H21I DUTSEFQI]4FG%E;E(EI-77@W'+Z>-/OMO74"R8"8#0\*;T)@[M`U.*
M\G,13:1M74FPMS_-"F] M_Z)-.)MRT;Z4B/#6NH]!MQ$-)WJ0X=:Y)+*<WG3
MBO*:<G'3WTB ?_BNI.'VNW)&N])>&VN8?4C;O--'*.5C2F@$374MX9:%6K(]
MYJH^Q8L8@BV6S&<=DR=_?4TNXY\B:;+&M=!>6V'V;9*V96HP@2=3[ZG3A-FM
M`/*/: TDTT3*>W+D1,4)$UNKMK4ONI18KRM*RJ<SG3V5=3A%@XVA:4*RJU!S
M&HNXY2(_SIC76KP*Q3'96!'5=,C ;!9U#D>"ZFEY1R44Q\(KK',`L4)48?(`
MG*#)/PK/9LL.>?;:6QB#)<,!3B0!.^_E334RC"4!2,&8WK:19X8MPH2UB1&;
M+F#0*9F-ZL7>#8<P^AHO7*BHP<J0H)\R-JFEY2.;COIB*ZH\,VQ!4FY7DW"M
M"(JO;8!9W:W$M7;A*%091$^7?32\IISD>%-&M=0>%09";GWIH%<).Y04W+<G
MO!IQ7GC^N9BD1W5T?[TWR>S<-'W_`+* \)WH)A^W,?G']E35.>/ZYXQ.U(#P
M]U;YX4OR"0Y;F/S_`/*HU\,X@V)^I5Y+IQJ\\6$1K30*V?WN8@4R&T0=NU0*
MX?Q$&/1E*_1UIQJ\I^LC+OI2BM,X'B23_$W8\$T"L'Q%()]!N(_Z2OV5.-VN
MXSB*57587?I$JL[@?_25^RHS8W:3K;/#S;-.-7<5=32DCJ:F-L\DP6EC^R:'
ME*!U0KW5-41YE=YI9W!]H^^B*3W'W4,:TTNR+CFG;,^=(.N=]/EI@DZ&F@_.
M<\#YBF+RC]E'NIR*;+\:ND"7"3ZJ8\JA<4<^FQJ4BHUC4'PJ6"RV.RJHX[.I
MJ9K5*M>E11H16,6LB3[ZTL,:#KQ3,2DR:SD`5KX*F;N-1V37?XYO)RSO@K^V
M0P&4H ]8`GOJZ_R+$I6EOMJ$!(W-18QE"F(@=JEC`E^V(.4;9NZMR_GZXSSK
M:U9WJ7'>0XV4+.P/6H;9`^G7$R$@#]M-:,-_2+:S=<UP"8"-M.^H%A+^,/!I
M\-S(S#OUTK5MW#4\MNSN%W"W/JBEM*BD*)WJXE-86&7[EJ[Z'>=DB<JE:5O)
M5F /2M2[CEE-421K10,PID[TZB,XJH.).E%YT)5%(*'?K61)'6D1V3J-NM I
MQ*4DG8"J7TB[(_@Z\LR2=(3WTM)!X<@>CN=E,J<428ZYC3V(_A%[J/QM%8(4
```

```
MW;0L02HJCP)-0IY]J^^0R5<Q><$'I46]UHQK3QUJ@+VXGM6R@)GKZO0[5>25
M'<$>%5.A1I3E) WH0J=(.GA1J)RZ30#E!$T@.SK3S"3K%(>IO0,D33%&U$"!
MMO0E6LYJ(P.)Q"+<>=<X)UKNKVW9O&>6YEVT/<?NK$_>V#)%XC7;3_.N>6/E
MTQRFO(>&A-XYOZF_3>NC=" P[S2,D:U!8VMK9-A#90%1VE3J=*M*4TMM:2X@
M@Z$%0K749RNZS[92F7A;E>=M8[)[O.H4MI;1B*FP$J3.7W5;81;,*)0M.OY2
MYCWFI,ML7"[S&P2->T(/QH;9Z4A*; I@K4>V4_H]:B*0C"WW4?C0Z=1OZU:C
M+=HV]G#B`29U<T]@FJV'VMLV2MU2,Y6HP7=(/A,5/)M<*9;3KTJ1*.R*!QUF
M1]:WM^4*=#[60?7-G3\L5=LCRZ>RF"9\Z0>:@'FM[?E"ESFM^<W_`'Q13E.M
M-DI%]K?FM_WA2YK1_GF_[PH$4@`>)J7+]741>;TEQ&_Y0J7F-\N>8B/TA0`4
M;>-):>U[*?F() "T^^G4I),9A[Z@!"(7[*SKJTY^(N 0'1;JR*(V5(K5:@J]
M8;5&IE)NU/9NT4Y3)Z5.UC$6RI^RN7W3GY:4I1ILH&":V6D?4M]^4?*DNV0X
MPXS$(5N!IUFI`C*D)'0`4B^&0RW<N/WZ&DH+1<A2E*U&G012-JAW$&\.>.=A
MI@+2-NU)]M:S5LBWYJDA4N+S'<ZU#<60?4'$+6TZ-,Z!J1W5%VR'7+AS"DK6
MGG-H=4EU*="4`^%7;.V9=-C<6Z\C*$JRH))*ITW\(JR[8JY3;;+JV$@R0D>M
MWS1MV"0_;N(E(8"@$C8S4-Q*I$N>RJ%D/2\0?NX[#1+ 0?R@=_C6DH$.>RH+
M&T]$0^ HJYCJG#(ZFJ3IG,LW6%6ZEJ>97:A95E0DYM34BFP;O&TR/53H?^G_
M`)U,O#G%ND&X_@NY9*=29_*WJ2ZL5KNENL/!I+VCZ2DDKTC0]-)K+6XI*3_L
MB#_RD@#RHBC^&X((.J%#_!-7#AP`4SS"+;D\H-:Z4-I9/>E-.W#B5BWD,A*2
M(!$:]]#P9QQ8QIA@'ZI;:E*3'4&JUQB#K%@^XLJ)])+*5A$\L90<Q'4"I2U=
MNOF\0V@/(!0VVLF,I[_&I7;9]K#W$(8;?6^LJ<0M9"1(@Q[J$B6R0L6R.<^E
M]9U+B4A(/LJ=2-?"H,.LTV5JAA))RZR?'I]U6E@3TFJS>P)21UJ)Q)]D581E
M)(F@<T!@T$36K8DFC"=*37XM/?1CIO556N;-B];Y3Z24%0]51'RK*P3#;<O/
M/'F%;-PXVD%U1&4:#3VUO@`J$[36?@S*FDW96@IF[<*001(,:UFK+X95M9 8
M:F_%Q<)="2H@N$I\HBI%7SZ';AXDPBR2^&YV5)%-;86RC"/2,CJ+CEE4<Q9U
MU^S,=XVH5M/7"[L)0<[F'(2 !&N8DQ^RC7BWRM%N]L76U&[?NPMQ+90I(A,G
MUI'=3$W]V\\MF]-NEMQ39;Y25YLI@ZG76*CQ#$4//V/H3SJAZ0A+BVU$)@G9
M0HB\U;-WC"GE-W"WG%H2CUXDD$#?;7RJ&KVKOWMX^Y9MM.)M2ZA:E%UE*M1
MZQ4SS=XVQ;M<VV<N'72G.61&4))V]E4$&WN%X6<16@I++AS/JRR9'C6C>I%P
MC#V[*Y0U]<0AY "P(0>_0U=KK2-EH(NDVMVTRXXM',"FT0F 8CSJPO#+-1E5
MJV?8106S"V,50W<O>D/EDJ2]E"83,9<H^=:)3I6I;&:R',*LNU%ND>1/[:YS
M%K=IB[*&TA*8VFNS<3O7)XZ +[?[(K6]Q<+YTQ5@"H%ZJ[M*L+J%8[0[XKC7
M>+# ["M.E1C8U,S.17E4)'9/?7/'MO(2-ZV<$"1=G,8&4]*QD36S@@/I9W]4
MUZ/B_DXY_P`:VEX?;/KSN J.U%=6MLFP6.7F"$D@'RJRV"=]J"^'\ ?(U^K/
MRKMEXCS;NV3:-W+5N76;>V2%HDDS,45I;OO-A]NULDDJ,$H)^^KN%N*=LFPM
ME2 EM(S$B#ITJ^E"4I 2`!W#04\%RU6,RFXQ#F.J;LRI*RB5ME1D>VIVSB#S
M[K8<MD\LC4-&"8VWK20C*DP`!O HD@22*:3DRA](JO#;^D,@A&>>2=O[U"Z;
M]%ZPR;MHET'4,1E@3WUK%/:FHE\T7#>5(*-<Q)VJ:AM0N$8@R6HO$JSJRR&8
MCXT]ZU?6UNIU%\I9! RAN.OG6H1M-+0[U.,.73/=LKM#"U?2#I4$DQE'NJ-J
MPNWK=+B\3N$K4F2 ![JU)D'QIP`=J:AMC-,O<@*N<5NFR21JH=_E4;*DN+=#
MN,702A>5)#@$CW5L7=HW=L%M8DQH8VK*P[ 2U=%RY&9 )RB=ZFO+4L_4K>'/
MN7:D_2%Z;?)F"@YJ3[J=>%/"\;2+Z^+2@<Q+VH-;03T`$>%.$B15U$YUCW6#
MK06#;WEZLEP!<O[)]U276$$6[BFKJ]4Y`R@OF*UPFB4-/G4U#E64G!&E,]IZ
MZSY=3SSO36V"-&U;](<N,\:_7'>M<IE)`[J%EM2&DI6K,KJJFH<JQ[;!&RES
MGK>,+.7ZT[4D8(WZ<]F+O(TR#F'?K6T$TLM-1.58KN!LF]9R<SD@*YGUAWZ4
MKO F#R?1TJ3"NT0LC2MLI[MXIBDZ0/.FH<JQKO K==JX+=O*['95F/?K5H8'
M9<A0+ *XW\:N.,%Q"D9E)G[23!JP$E+9&Y\::ARK#L<#M46J$W+*5.CUE3OK
M16V"6R5W!=82I"ERW/0=U:Z0.ZGB3I%31RM8XP.T]-*O1T<G( $GOU_RHUX'
M:&\MU(MVPVF<Z>_0Q6M&M.@=L&*:ARK#Q#!+5QE*;=A"%Y@9&FDZBIG<%LE6
MCB6[5 <*"$JZ@U9O[ 793-Q<,Q_1.99^%666N4RE&92@!NHR30Y77;-ML$LT
M6C:7K9"W`@!9[S4=E@-LTTL/LH6K.2F>B>@K;RTQ`-31NL9O`[5-Z^I;""TJ
M,B>ZA7@5J<00XEE/(R$*0#U[ZVB-2*?+!IJ+RK$N\"MW#;\EH)*7@5P3JG61
M4][@=HNP=1;LI0\00E0)$&M!YCFJ1VUHR+"NR8S>!JP1V-*:ARK'1@EER6PI
MGMA F%'4QK4=I@+";=*;E"E.C<YS^VMJ-J)0,[=*FH<JQ+7 V [<<T.92OZL
M!PZ)@>/G0' V?I!9ET6_+T =/K36ZA/:]E,H0HZ5-1>58+^!CTBWY"[@,YCS
M8>.T:137^"%-JKT1VZYI(CZ\[36VMI3BT*"U)"#)2-E>=&4Z$Q347E61<8*C
MT9:FKF\SA/9'I!B:B8P51M6R]>7R7B!G`N#H:WR)3K$T&4D^VKJ)RK!L<&N'
M62;K$,00X%'1+^P]QI[";M5Y=(7B6():04\E0>$JD:SI6\H:@4Z$]K2II;6
M`YAEVG$$,IQ._P"26RI3BEB0?=1/V-XRXTEO%+Q:5N95DQV4P3.W>!6NXET7
M:2"GE93(C6:E`F3]U-1.3%N[2^MK5;C>*7+BQL%)!^ZIKFSO;=MYQ&).+4A)
M("FP9(%:D42A*@=:FH;9%JSB#]HT\O$`E3B0I22QZI]]-AXQ*[:<6;YE&5Q2
M(-K,@'?UJV"->N])M&A\Z:7;%M5XF]<738N+4<E>63;$SL?RO&I"_BBL2-B'
M;,E+/-S\A0TF(C-5]D.%QS.A*1F[)F9%6"D:&$YHB8H;_P`9*W\48N&&?X$H
MNDP<BQ$?VJ&[N,5MPE1:LUYW$H$%0U) ^^M<(!4"0"1UC:F6E*M%)28,B1-3
M1O\`QCOWF*65L[<N6=J6VM5%+Q_92=NL6#><X8R1EDY;D:?"M@MI=04+2%)(
MU2H2*JXC<>BL'ZAYP*20.6D$#3KK5)JWIEVN(XJ]:MNMX*%-J&BA>($B>XBI
M_3,523. NS^;=(/W58P8?@:T\&ZN[4BVS\90Q&_DS@5T"-X=0:0Q9])&;"[M
M/L!CXUJP=*8B-.M72;GXR?IAI,!=K>)\V2?E3)QNR3ZWI0($&;=1TK4(UV H
M@HCJ??0W/QAC'L&23+JD@D$RPL:CV4CCN!K=YBKM&<:!2F52/:4UN9C,ZSYU
M&4E1)U]]/)X_&*[B?#[J4)6[:+"1H%MS'O%3,XA@J$H2R]9H""5("= DQ&E:
M1;23J ?,33>C,$06&CYH'[*:IN*R;K#W'P\+ACF!.4*S"8F8J0NLDZ/(/DL5
M(;*U([5G;GS:3^RH7,,P];8]`MM.O)3/RIY_5\&.1<Y5`^1%<CCY_"*IWRBN
MG5A.'Q_$K?V-@5RV-V[=O?*0T@)1`(2-A6IO36&MLA>M0J@J'E4R]!TJ(F5
MQTKED[SM98'85Y5"3 J=C1M=0'4&N>/;68D#6MO @3='2>R:Q&XK>P$!5V?T
M37H^+^3C\G\71I2.AJ.^2?H^XC^C,Z^%3)307PC#;@C<-J,^RNV73S>U;";E
MM^S:0C-*&TA79\*T8TJGA;K3MDRE#B5*#29"2"1IUJ\1I%6I>P`3391-'M0I
MJ( B%1UJ)Q[+<MM9%'/.H&@CO-3E(DGPJ%;J4/(;.BE3`[ZBI":0%*-1-.=]
M*H5.( ZTA'6GCW5 X.FE)LK459T90#V3WT@FG;=YLC(I.4QJ-_*E$@BB$2(%
M,#$421)!J HFG.QI41$@:T*!0.0E(DQ2:"^2GFY<T:QM1F4H)@DQL#O3-$K9
M2I2"DG=)Z5 X`F:4CRHD@ 13P#01G?2BC04409[J<C,*"%U+I:5R2$N="H:5
```

```
M*-6X,33.*6VC,VCF+&R9BIDSRC(U[IJ"`:=-*(?"G"9$#2G'=W40(&LT2#VJ
M<"=8HDCM?YT50OD7;F7T9]MJ-3F1FFK+(6EI`<(4L#4@145XNZ0I/(80Z(US
M.%/W&K#.8M J`22-0#,5`X$TC.M%E._6D* ([Q IS(V%2>1IO"@@=#BBV&E)
M2 H9I&X[JG(AOVU&Z5@MY$9@5:]J('?4Z@,@'WU%0]11*$*HH@Z4B-=:(%OU
MNM"H'-M4K0!50JT)H(%AXNMY,G+GMSO'A4JAW;4*EJ2M"0V59CJH'U:DTV^^
MB^3*&FU"$G2IE"10Q&M%`J)&FM.C>B(DFD@0:FQ66IPW02$`MY=5=9[JE B?
M*F4X?2PUE424DY@-!X34H&\TV(HBC5H>M,11%.L]] ,22=:)&Q\Z12,QHD)W
M[JBJS#P=<=2&UHRF.T(GQ%6%#LBHF7&G''$H4)085X&IHE H!3ZT4EB#3I&N
MABDH1I-1#(&XJEB%W;VS92\ZA!4DP%&)TJ\@3WU6NU(1;N)6M*04F I432K.
MU7!8.#6F\<L5>"==HJI@XG!K0S/U8JZ$QW59T7L!&M(B:,B*;45?"*%[B-M9
M+2A]92I0D (),>RH1C>&_;N4)_2!'W4UV7/IUH-N!M7H:X6HP <PZUS%^,4Q
M"_:PZYOF;D@9TJ;4%)'M`U/A6;;'3'&5U*<:PLJTQ&V]KE2#%,-5ZN(6OM>
MKDT6C"\$6Q87"WUNW;:!G1D(44J$;FH%8 @VMRMN]SW%KE#K'+B%*,1,]]3=
M:X8_KM/3[$[7]J3X/I/WU83!$@R#W5Y^_@;C5JHAX./H3+K 2<R!XUWUF#Z$
MQ,?BD[#PJRW?EG+"2>*DC6F/6I10J!(K;,5U)KBN(I&)J\$BNW6*XCB*?I5<
M[P*OJMX?R8:SK47VD^52KZ5&?73Y5QRZ>B+;`'+7Y57.D^%6&""TN>ZJY RG
M6L8=KF-O>M[AT!5ZK]$U@-^%;W#G\?/Z!KT?'V\^=\5U*=14=\(PZX&I'+5/
MNJ=(J*_GZ-N8U^K5/NKKETX3M7PJW89LF5M-H0M;22K*`"=*OFL[![5MBT;6
M%+*G&TDYE3&G3NK2W'WUJIEK8,LBFCNHX]]#(UUJ( COJ%64/)!*<^PDZU/U
MFHG&D*?0X4@J3L>ZBB(/=2@C>G)$ZG6D1IXU$,!)/E198$4,#QHAK18)(\:(
M+0X2$*!*=#'0T(G34T:4!([,"=3 %1!A,>-.E.N]`%@DB:-)[0'4T720">M.
M4^-"HA)$D"=J)2@D23 [Z@<Z)))VI-D+:2I,P>\12*P$:[=]$A04@91I0,GV
MT0%"VM*T]D@B8D4DK0I:D@C,G<=U1!G0QUI^E1EQ(<")&<B8HE+0V4!:LI4=
M/&BDM8905D*5'1*9-2B5-DB8[JC4XAI)6Z4I2.IJ70,J5,) F?"HB( ^-.$Z
M>-)LAU&=LA23!D"DVM#I5D()28,=#38+61$T:$D*ZS4:5I+I;!E:1JF*(+2E
M]#1/;6-$GK05+V\]&*06'W)'\VV5?(5995S&4JA29&Q$5!>7EK:E//>0V3MF
MJP'&_1RZ".6$YLWA448![Z4=U)"@IL+204J3(/?3,N(?&9HA8!(T'6B"CPIH
M))T-)*T.+6A"I4CU@!M3<Q >Y.8<S+FR]8HH'7.46QE4<RHT$Q4YD(C70U&M
M26E(#A *U!*0>IJ5TI9:*W(2@;DC:H(X)C>B*853CM *&H(D4X*7$A28*2)!
M%-@&TZTRDRH]]$TI*E*RD'*8,=] 7 72B1F DCK%`*G$-K2@YLR]NR2*/+%(
ME 4`J I7JTEJ#:<RS [Z;42O5]M#EVU%&LPB3MUUH004A0.G2ALE)ZS3H&M,
M3F@C6G1!)$Z]?"H(E+1Z1R\PSD2!1I!,S3+0.=F@9HWZBB WHH2F?*G6"#IW
MTLI)T$T1$JVH`@DG0TZ"=9IR-3K3H ((`ZU!"CEE2RWES3VH[ZF@Y*B:;;;6
MXI"$@K,JCJ:F5ZHZ>$T`I$&DH:ZTX];>F6)ZT4D@D::U2Q*S8NK=2KAE#A0@
MY2H3&E76Y -4,7LDW5LHFYN&<B28:7 5IU$4)/)L''X&M.G8&E71OM53!Q&#
MVFD?5BK@.YJE[,1$&A(HYT\*$G3I086*N,M8LA-P^AE#EFM(6O:<PKF[1NVP
M7$[:Y].8NFY*3R3M/?-=+BF$L8_<=F[+:K>6E -YM?>*QF^%+1U24MXO*EJ(
M3-N=2-_M5*ZX62>4;'H^%6S!5>V[Q3B#3Q#*PHY4@SH/.K3*4HM<<OP^TXT^
MZTZ.6L*4E/,G4#8Q4;O!C;!1GQ9"2M80B6#JH]-ZO7/#EX[:)MFKBR80$A+A
M884V78B"O74R*FJML]52Q._N7O2KAO$6F[%Q!#0"$*4OP/VD^VNJLPE-DP!_
M1I^5<:O@R\2#EN65:=Q%=JRCELMI/K)2`=?"K)=^6<[->!@=)ICTWHMXDTE#
MI.U:80+$SW]*X3B/3%W=:[Q8`DUP7$>N,O\`G%:]5O#MB.&@,9QY43FE"3VQ
M/=7')WBXQJTO3I5<B$&:L,?BE@]W2JY]4CK6,.V_D)LP:Z+AP3=F`"<IWKG4
M`]8K?X:,WY3!C*=Z]/Q]O-GTZ]"!.L:5%?IG#;@::-*GW&C2*COTSAMP.O*5
MU\#6\NG",["@6;,J4\\Z>4@Y<NB9&@%7VW.6R4?6N*"@DE0U)/=X"JV#-W0L
MFB^IOEEI.0(F=NLUJ Z5:7M38.0*2>:LJ<5!<Z#P\*!#ASJ7D=.9)5"H@ 5=
MB*:![JB*964/+<*%R4 9=(_^:%94JY2YD<&0Q$B#(^,5=*84:B6APOH*5P@3
M(C>J('"77$?5J[*XT4!/G3.YGD!"VE!),Z'NJV1J!3D=K2H;5"IQQ)2IK=$D
M`_"B"G4M% 92`$P!-62F9FEE,0(UWH*[/,;1D0TD`$ :ZFI&TN-J.1I"<RM3
M)U\:F"?*B0SD)[:E2?M=/+2H>4#:7$NE?*0%&9.OLID)>+H<4VWG"#VM9F=*
MMA.NM. ":BH%I>602TVI21*<WY5&M-RZA25H;*3E@?.K`3&_RISX?*B;5EBZ
M*%I"&XGLB.E.P+E"4C(T$!70?9Z586WG;4D[$0:320TRE"?5`$5!`TFX;"0E
M+0&8E4#I2;1<#M*2R'"DYRD;GI5I,^%*-:&U52+C,%_5%801)&QIUHN%I!^J
M*@D1(ZU;CK2WH;57$/KS"6X($ @[SK4ZA<%MP HU4(!&D1K3N6Z+A!:<G(>D
MQM4X$(@;"H*01<)("2VE(6" !IE[J)*'TD%*D!)65'3<592@D;_&G"3WZ4%1
MMNX2XE>9!.8E6FX.PJ1INX#K:EJ02D$$Q5@(UZT8!G>*&V<NV>6$<PMK(01J
M!OWU+RWRWDS("2V4C2=>^@Q#"K._6@W*"M21I"R-/8:MM-AII+:?5&VLU!7Y
M5R&U`.(!#82F-(,:TZF[@(<#:T)D"--CUJUEIX[M:"HINXETH6VDK4""!TZB
MDMM\KS)+8.<&2-<O=5O+).OQIXC_`.:4VI*:?<4V5J:5#N;43 [A1K;N5H2E
M1:*<ZBL1.DZ5*[;H>4TI8)*%9DZ]:F.U0VI(1=)4T%%HI!5G$;]U$VBY;Y28
M:RI00H ;J\/"K1!TIU#M=*+M281=H*I#`):UA.[G?Y4Q1<I<<6E#(6IN`K+K
MF\?"KS>AZ4RHS']E04BS=+*UEMA2TA/+,'0_:Z4UPBY<:=26F%=I/+"A(WUG
M2K*V$N.MNJ)!;G+'WU(1UH;5EBX<:6E3;)!<@ @^IXZ;T"1<("$!II*0Y! F
M`C]M75"4[?"AC3;K5-J;(?9;:0&64#,HK")&DR*=KGMD+2PT%.)47()]8>K5
MQ0\*2$3,[T-J2N>'TN*8;Y@:U@]>ZG<YJB%<A*BA`4.U]O8CR@U.63Z1S I0
M$1EZ>>U&$Z&HNU6Y#CK:TEG,D98A43WT;ZW%J6V6"4J4$Y@L#0C?>ILL?_-&
M09G[Z"JDJ:"&N4O*%9,V8;#KO0VI4U#88>*5K42I2@8^-7#O3H.AT&]%VH,'
M*I2@U<$NCF0H@A/@*+F /J>*+F R"4$`IWZ#\JIV4NI6X7'$J!/9`3$"IR.R
M-!15)QU N <MR V1("=%3M3O.(4X$IYR%)="3"-%?Y59"9(TI*'0"B*:KMM:
M5,H4ZAU3BFTJY9W3O53$'5W+"$VUR6RMM2B%()S #7RK7#8(U$FL[%S>IMEF
MS0P1RR%<TJGV11J=CPE,X1:0)^K'6K60GNJMA;>7"K4`_P`V*N31F]A*('A3
M99$$&B/G3;C0Z4&*\\<+O;M+:>8'&C=G-OFD)CRIF6E61LFFW%%#I<<5FC4Q
MFBK][9BZY>P*3"R1JI&LI]\'V4S]JMZ\MG0L);:"@0-]1&E&ML1]3]XYA%ZN
MX4&'KQM26"D=DP>H]M$<?2<3+?I"82]R3;AE6:9RR%[1UWVJP,+Q%#V'L(7:
M^@6;Z74YBKFD#OZ=:O--7]N]R65MHM"LN<S-*Y)*B(B(DD>VFE\*=UB+Z%W+
MS7*%O9+*'T+3*UD1)21YC>M9I6=M*AL1(G>LN[P^Y)O+=K*JVOUJ<>=4H9VR
M0!H-B-!6L@94)2#,`"JS3Q.M,0(T)H@HD:@^ZDKNG:JB%0.M>>\0_P`MW,_E
M5Z&O4'O[Z\\XC4?IJXGHLCXU?3IAVQ%G6F^T.^*2C2^V/*N63T1=M]&5Z:@5
M7/JFK+!EI<=U5SZOE6,.U^0*:W^&M,1/Z!K 2:Z#A<9L4(.W+57H^/MY\^G7
```

```
M('=07P'T=<_])7R-64MB=-JCOFP,-N>_E*^5;ROAPG;/P9QUVR:SL\M(;3E)
M5.;3NZ5I'0:5Q#/$[[+=LA#0"&D@*&;UX$>RK)XS='^Z(U_//[*ESC=^/+MU
MHVIB?&N,?XNNG65(;:2THD=H&:9KBJ[2M:BA)"CH#]FG.)]>3LR-=142N8'T
M0!D,R2=:Y0\6W<R&D>[>H+CB2^N6R >7/5&E3G#Z\G:D#-)WIQ[#7!_3M]S&
MU\U78$1.A\Z%>-W[@2"^1!)TZTYQ?KKO]Z?2-17#-\27[250L23U2#&GE3.\
M1XBZC*70!OV4``Y4YQ/KR=U(U'WT[8=UYB@K7LP(TK@1C6)%*G ZO*""3ET'
MA,5V^!WXQ/#TO*;RJ2<I\3%.6TN%DVNI&M.D2:E"0*D"1FB*;90A(UIXCI\:
MFR@'4?=10(IL5U(4IM60Y5$:'NI-(4EH!2@I0&I[ZL*$-*RB51H#2:"BTDK2
M`HC4"FQ$D1.A]]*#-3@2-12 CI4$!3)U%.$[>%3P/&E'2B*SK2W4%*'"A6G:
M`\:G2#RSK/LIG0[DAF N1JH:1-9[6*/*XE=PI2$\M#7,S =9&E2U9+>F@V#3
MA!)/[*F $^%%`%!7"(.WPHTI[6QJ7*DG6*<`3IM1&1?VSMRZE#5ZNW5EG*@`
MF/(BKJBFT82;AU*1$9EF)-<3Q5BUVQCBVV'2T64Y`ILQ(W^^L&XQB^O4!NYO
M'74`R I59W'286QZD+RT*?XVP3T`<&M$IQM 45+2`F,Q)VG:O(B\M*@L+((U
M!!VJPO%;UU*TKNW%)6!F!5O&U-K]5_7JS;S;X):<0XD&)0J:93K:%I;6XA*U
M;)4J"?97F;5SBN$L)*'7K=IX9D]J`KXU`]BMZ_<(>>O%J<1!2HJU%-GU7]>H
MK2I\MJ;>A*%RH)Z^!J<J292%)*D[I!U'LKRQO'\28S!J_>0%&2 K>M3!^*5V
M:+U^Z6NXN'0G(5F1I3:7X[([Q;C;2@''$(*M@I0$T:@<V]>8XACMUB=\W<.&
M$M>HV#H*]+L;@WMC;W2@`76PH@'O%-IEA9/*5L'-0JU,34R <PT/NKCL6XN+
M##MNRG)>!:D$_DCH1W]*;22WITRVWB\VI#V5M,YT1Z_=Y49!_P!&N*X9Q[$K
M[&FK>YO%.M%*BI) Z"NZ($[4V98V702.SMI0$3 Z55QO$_H?#3=%KFC.$D3&
M]<G><97=Z&VL/M2R]FGLDN$^$$4W%F-O3ME :#>B0D50P&Y<O<$M[E\RZN<Q
MB-C6FA(,]>ZB*BDN^E3(Y67:-9J4"9(KCL>XHNK;%G&+()0EDE*LP"LQ[]:+
MA_B*_P`3QAJT?6CEK!DA`&P\!4VUPRUMUNHBG(,B0:/(!M!K,XAQ:WPNR4"N
M7W 4M '7;UMO$56=6^&@09VIT@C:HK E>&VBG%2M3*"I1,DD@35I(A)ZT72L
MR72MP+2$@&$P29'?4RM$BHVEEQ3G86G*J.T-_*IR.SL:41IB=?G2)!THPF3X
M4*DZ]144R1KWQ69B]XJUMU)%J\\%),E !"?.:U4I'A6#C^.6-E:O,)6';N,I
M: *2)ZSM1<?-7L.21AUMKIRQK%6P/:*RK'&,,9PYA#EVE*DM@$%M0@^ZIQCV
M# #\)6X]I'W4V65>(TTH0-*I_3N#D?RI:_\`^HIOIS"2DQB=IY\Y-5-+AC:E
MH#T]]5/IC#5&!B5IX?7I_;1IO[%S5-]:'_ZZ#]]/!I8F2=*&-:C1=VB]KI@Z
M='DG[Z(.LSH^U'@XG]M7:"4/'2EMU^%(+;5$+21X&:,)5 B3Y4 Q-,K;4'RJ
M8-.*V0H^RA4TZ 26UQ^B:1591!'AW37G7$1_#=V/ZP_.O25-J_)/NKS7B$?A
MN]G<.J&WC6O5=,.V,O2DG\8/*DLS3I/;'E7++IWQ7;?\6N.ZJRC*?"K-N?JU
M^555'L&N>';7R!08/A70\+*_"N@DY%:5SR=JZ'A7^51!CL*^5>KX^WGSZ=LE
M1'2H;U?\`N-OQ:OE4J9Z4%V";%_NR*^5:RZ<'*X;P[AUZPVH73RG"@%:4$=F
M1Y5>'!V'Y9YMP?$K'[*TL(;;1AML4)2DEI),#4Z=:O@@IWIJ-7._KGAPAA\Q
MG?/FO_*C9X7L&74KAU1&L*7(/PK=D$&(@=::1)&DBFHESK&=X:L'G5.J0L%1
MF$J@"D,%PYF+/(?K9U.ITUWK9$9XG6-J960.@2).U/!RK(_>QAP(^I) [U40
MX<PP?S'QK75"2G,8G:DLI;3F68'?4.59?[W<,W-L@^=$GA_"\NMFT3WD5JZ)
M05$PF-?"G!3DS#5.\T\'*J+>$6*6%,)MFN4HC,G+O4>"-)8;N6FT!"$OJ 2-
MJTVE)<A2(4"=".M4<&22J]F9](54]INZ:(GWT0)GSH4+;4XI`5*D[BGYK8>Y
M4CF1,>%$2&9I;4#CK;*D!:@DK,)'>:-Q:6D9UD!)($U EDI:4J"8Z#K3-*4M
MM*U I)$P:=2DI:+A/9 FB:4%MA21*2)%"$E!WDTBDD[FA8>;?;S-JS)DB=J2
M'D+<6VDRI'K5$$09T-. 10%]`?#,]N)BG>?0PM"5DA2R0F-=J!GW'&F%N-ME
MU8U"`0/B:Y/!G+R[XG5?7+/*YS!RZC6%#QKKGKA%LTMQPD)"3L)Z5SV$K"CA
MZP>P+59F#MFJ7MO'Q*Z8!5/![Z%MP.MI6DZ*VG2F9<2Z"I!)@P9JL# UW.E.
MJ4(4L'U4DZT"7T*><;!.=$3W4+SJ$E3))SJ;40!Y5*NF!:BY#'I2[!%ZY<$K
M)!2C+TC6>[XUN(LK=325*MFTDC;*-*S;/$[:RPNT3<*4DJ1("4%74]U;!>;1
M;EXDA $[5(M_Q&+&V@RPV=.J!2] MHGT=K^X*G2L+9#@G*4YO90LN)?;SH/9
MF-=*(!5JRM*4J:0H)T *08J,V%J3^(:$=R!5AIY#JW$))*D*@R"*;G-^D\B3
MS,N:.D>=#RS[S#+1;UJ19H7E<).5($:=>^L1S#4O\<0BU1Z(V@%V``!*=-/9
M75O/MLJ:2N<SBLJ=.M9C"T,XYBCA/9"69[]14:EJ)CA?#;&Y7=(2M9(4<JSF
M2)\(J[@J",$L?^BGIX5=.K94=BDD>ZJF"I(P6R)_H4]?"JERM[0XUBQP:V9N
MN6'$EY*%#K&NU9N&</6UY;W5W=L+0[=J)RK@E Z1H8J+C5Q#^"(#9S%-TE!G
MO@UTC+K2E<A*I<0VDJ$;`BIVLNIX9#UE;6>.X.FWMVFS#H44H *H1U@"?;6V
M09K+Q 1Q%A$[_6_JUHW#[5N IU02)@2)UI$MVYS%[YC''3@:$/<Q#\NJ3T G
M7;Q%:6&X!A^%LI#;*'74DD/N(!7[XK&P=:&>,,:<<4$A!5*HT D5UJ5)6@*3
M!2K4$=14GF;:O_/B,KAX%.!,2?MN?KFKUW?L8;:+NKA1#2(D@$[F*I\.)C &
M"!IG<_6JEQ<\VOAJ\0A0*D+0%1]DYA5]'>6F?8V%ACEY<ONMJDO\T%3<9T$"
M!KY&M3Z*L;#&<.79VR&5J<4DY-)&15:&&Y4X?9HD9_1T'+UB@O #BF&28'.5
MT_JU46V]+H"IB?C7+XE8#%'\2N+I>9%DE2&$)T@E,S,^%=22EL2M4:Q)K&6$
M^B<0D3J5?_C-*F-UYB_AH4K#+0G8LH/?T%'>70L;)=PM!6E*DI@:;D#[Z;#0
M!A-GKH+=O?\`1%<WQ@L_2.#A*CRRZHF#H8RTM)):ZAIYMY3H;4%9%%*M-C0)
MNPN_<LDH.9ML.%72#5C0+<RD1F,P>M9K/:XENX_X5'7\XT3PT9RZJ@`:DT(<
M"TA:"%).H(ZT-TDFRN-/YI1&OA57!I5@5@1_0(,>RAM=SI2@ER$IB9FO/%8#
M>8@7L1OKE"4.MEU"@L%1[A!\ZZ3BV]0S@ZK%06'KPY&B-@00=:F>PMMGA]#5
MS;LNO6]MES9 8('0D5--XW4VOV:1Z!;R!JV*DY+2OYI!([P*:S,V-ON/JTZ>
MRIN\2?=6F4"K5@C\0T?-`-1+L+)6]G;G_P"BG]E6R(IB-Z)NJ/T78$_R=:'S
M81^RA.#84O?"[(Z;EA/[*NF*732*+RJB,'P@S^"K('O#(H?H/"5$?@VW)\$5
M?WG;:FZZQM5.54%8%A2DB+-L'<%,B/C3'A_#H&5#J .B'E#[ZT3L(VH@--_<
M*'+)DGARR)$.WH,_9NEC[Z'][=ND')B&*)[XO%:5L1.^_=3$;U-1KE6(KAY(
M5IC&, ?]X=/A7#8PSR,3N6RXXZ4N*!6XJ5$SN3WUZ@!]8!XUYCCAS8S=G^M7
M\S6M>&L+=^62LZZ4Z=%CRH5G6!%$G\8*YY=/1BNVWXI9GI55?JFK5M^*<\JJ
M*]0UC#MKY I,^==#PJ)Q=(&^177PKGD`Y370<(Z8RG77(KY5Z<.WFRZ=R(&U
M!=IS6;^Y^K/7PJ1)Z4UR/X*[/Y!^57+IQ9F!V##&'LNMI5G<:!42HGW5IM,I
M9;"$B$[ZF=ZS<"ME-63+BWUN9FA .P\JUNE4R[0M,H9"@@0%**CKN:26D(6I
M8 "E;FI(T]M-$FHB/EI#Q=CMD1(IBTA3R7%)&9.QJ8 YJ!3 6^A9)E.VM$)3
M:5J25 '+M1+;0XD!29$]14FDB*+RHH2A*DE*A((@T02 ,L:;;441T^-.E,]X
MJ(%M*40E, #H!5'!R)O=M;A6U::!J-8,UFX*)-]W^DJWJ+&B$A*BH#4TX0G.
M%0)'?4D$BG ).] !3)3FW!THB J01-%!!TIRD]]$!E&0]!3I`" 9$4ZD!:%)
```

```
M5ZI&H/6G;;"&TI2(`V%0"V@1I1)3!.F])*2GIIY4^4R(H *95IM3E/P\:(I(
M]GA3E)T,40*RE#*U.%*4Y3)48&U<YA,^DX;UFU40>A[==&ZRE]I:'&\R2D[^
M5<Y@R!S\-2E,!-LH::_;K/MJ=.F2B!(F:02=8GQUIPDBE!]G@*K)!.L@56Q&
MZ:L;%U]X+*8R@($DD[:35J#.Q]U9^.#*^`([N>CIXU+TLGD.'*:8PRU2\M#2L
MFB7%!)]QK2RRG>0>XS-17%BQ=*"WF X0!!*)TJ4)RH"4Z) V`H4\&.M#'<*<
MB*?*01^RB$!O(.O=39.OAWT673I2B#M[J %$`H!4`5&!)K-LM>(,53OE2S/N
M-::V4N+;4I,Y%2DQL:S+($\0XJ84``UN-]#4]K&FY^*4.F4S57!1."6/3ZE/
M7PJT\#REQ^3W55P4?@6Q!_H$?*GLG3#X\E&!LP-[A/R-=,WJD=3E&O?I7.<=
MR,$9!$@W"?D:Z9*80G]$4C5_C&1?IGB#"-.CWZM:A0.H&]9UXD_OAPHR!H[^
MJ*UH,T2N-P%(/&>-YH().GM%=<8(V^ZN4X?UXSQS791!GS%=<!E!\/&I.FL^
MV/PRK-P[;&-<[GZQJIQ@A(X;NBD"5K;DQ^>*O<,Z<.VJ=!JX8G;M&JO&6G"S
MY&Y<;'^(4]$_DT,/2GZ/LU%(S"W0"8J&\[6,87I,O*__`!JJ>Q91Z+:/:YS;
MH!,T%W'TQA?0!Q1_P*JI[65MH=A+B H`@@>/NK%6)L<?.L%2O+\6:WY"H[ZY
M]1C"L?D)T4KK^94O:QJX>D'"[1)V+")_NBN8XKMVV,3P5MI(2GF.& >NE=59
M`?1MJ!K#*!_A%<SQ>)QW`@K;,X/U:7I<>W4,VZ&G72A)2'%E2M=S[ZP\"N7[
MW&\66^HJ4VKEIT A(C]IK=:8+:GCF4LK650=8\*YSA8%6*8P2.USC/PI[)U6
MW>LH+#SQ3*T,+ /02/.JV%,H=P+"RK^;90I,'K%7;V1A]U$_BE=/"J^#(C <
M/'_+HGW567/<;F+G!TQN^J?A6OQ#9,W-F\XLN H08R+RC?K63QM_'L&3_6K^
MZM7B.WNUV3RV+SE,I;.=OE!6;7OG2I^MWJ-"U(]#8!&S:?E4L>&]!;P+1G*(
M&0=:.(/^=5@B`!3*&D@4Y(_T:1B*&F9<NO/8EZ"AYRV3RPXEU(';,D9=01TG
M:@1<W:<5MV;@I2%VZUK2G42%0#/E18C<VV;T>Z46!&9M\D 9IV![]#[#6:EQ
M^ZN4J>:*'UX8\ V1K.>![31J3;8M\18N7G6FPX%-CM9T$ ^1.]1VN+6EV^6F
M5J*P2-4$`^1ZU44MNX5AK=N\APVZ5\Y*#/+[(C-W3KO4-F\T]AF%LM/-NN-W
M+:EMH4"I`S:R.E4TU57]JFZ1:EX!Y0D(ZU:3M7)*M'EVUVAW%'F6C>*5Z(AE
M*E^MH1]J-!77_9T&D;4V6&R@?MH3&L3MUHBD^RAD*T.E$" 2M( ZB:\NQ@CZ
M6N]#^-5^L:]30!S4?I"O*,6,XK='O>7\ZUZ=,.V:L>^B3^-T\*%>]&G5[RBN
M>73T8KMKHVX/"JBQV:MVOJ+\JIKV/<)K&"_(!.@TKH>$P!C;9)B4*Z>%<^C3
M:M_A0_AQD:Z@C3R->C#MY\NG>I$G:!3/@>C.[:I-&D#372)IGQ-LYW93\JN7
M3BR\#:N4V3*GGD*;*.PD)@C?<UK;)K,P-RZ59LH=MPAH([*PN2K4].E:H&G^
M="HXT-++J#4D`30SX43P& "=*B6A9N&U)<A'VDQO4XCK4:\_/0$@9-9)JB2/
MC1@>$FEO&E&!`V-0#XT8F=C31(HP.L14#IW&AK,P60N^$'^,*K4`'=\*SL(3
M#E\(_P!X54]C3$]!3@GNH@(Z1[*0&LQ1"U/MISI3Q_J*8@CIM4V!*<Z"F2)&
MA'2G;1D;2F5*(&Y.IIU)44'*0%1H2)IVTJ#:<QS+C4B@20:1'=3Q'G3Y===Z
M`#,]*<ITZ4YTIR)H*M\II-DZ7WN2V!JL*B.ZL'!@D/X8$DP+56\R>WO6KCPS
M82M,2"XC2?SJ!U"4<0VF00D6QB(_*%9JSIJ;P/OIQ&VE.!K_`)T\3UFM,F&_
M0U2QM(^C6S GGM_.M!'^M:S,?TP]OQ?;^=2K.UF[LFKE84MUU!"?YMQ29]U6
M4H"$!,^TF:J7K-VXXDV]RAM(`D%O-_[A5Q(4E "CF(&I[_C0\D$IGI31K_G1
M#7IK3Q[Z( IW[J4>'QJ2A,$[5!&MKF.-JE0""3 )$^=9UB"KB'%HV'*_5K2<
M0XI;:D+ 2%2H$3(K.PZ?I_&?$,S_`':>VHTGP0PN->R:J8/_`"+8$ ?Q=&OL
MJX]/(7^B:JX,)P/#](_@Z-/93VGIA<>DC!;?QNDCX&NG;.9">R1*17-<>*R8
M-;'*"%7*1J/.NH2GLI$?9'RJ-?UC(OR1Q%A(UT2]^J*UDD@]2:R[U)/$6%Z;
M(=(T\!6L!KH/A1*XWATJ_?CCL:GF*U'Z0TKKB5&3!]U<GPVF.+<>ZGF*GP[0
MKKU:)5"9,=U2=-9]L?ADG][-G)).9R?[QJIQJN.%W]3JXW^N*N<-)_V<L])G
M.=OSC53C1,\,N)VEUL;?GBK_`%27_II625BTM%!PE!MD`(C0&-Z"X"58WAH.
M@S+W_05XU8L\Z;6U!2CE^CH@P9F*KW(!QS#9W!7^J:M/:VI:4)*UF$ 23&P`
MK YJ+CA[&KAJ>4\5J0I2",PRG6#6U>PFPN?!I7RVK-NCEX.4F,J?13,3W&I5
MFFG9H P^VUV91M^B*Y?B\@X]@4?E.3_AKJK.?0K<2?Q*-/[(KE>*3_M#@0W,
MK_\`;2F/;JF4.AQWG/)6"X2DY8@=U<WPG!O<65UYY'RKI6EO++I=;#9"R$@+
MG,.^N;X0`-QBQD1SS]U+VL_C6]B _!UV23HRO;3H:APF1@MCTAA C^R*EQ,G
MZ)O8,'D+^5!A@_!-E)'XA&NGY-7VS>G.\9S]*8+I,N+W_LUI\1JODV#X9::4
MT6^V5*@C6LSB\%6,X((^VO7^[6IQ+<O-V-PVFT6XVIO5U*@`G4=*C?XTF@!;
MM@3ZH^5'-,T`EE&GV1\J* 1J*K%"34%U=V]DT';EPH;)B<I5KY"35B(TBLW%
MTYC9)DP;E.QJ^20#V+X,I/\`"72$)UEVT< !]J:%./X#G#JL0M\X3E"BV9 F
M8VKE>*+C&;</-7&((=LWG2$H2YF(`,@$=-JS48,Q=X7Z39N7"KEMLN/-N-Y4
M!(ZA76LVNLPEFW<#%>'V>>6KRT96ZF%J2WE)D&)[()JOAEW@-BPV$WMB;@"%
MNI3E4K7KI-5,2:2J\Q%*"$$JM %91V9!UBLZ[X?M5OW=S?8KR3Z06@I%M*5*
M\@=-Q0U.MNE5B6 KNQ<F\L3<#0.*4 J//>M"VQ"RNU*1;7;#RDB2EIP*('D*
M\W:X==1=O^G/"ULV?7N"D+B?5[(,ZUTW#N#-X1C]PTW=)NFW+)#B7 WDT4KN
MD]U/)EC).W4ZSUBF4(@P)H\O6/A3$&=16G-$)S(G03M7D^)F<0N8_I%'XFO6
M2-B17DN(?QU^9U<5\ZUOPZ?'VH+!G:I&XY\'OJ-9[0WHT#ZQ6E<\NG?%=M!"
M%CPJHO[7F:MV>H7Y547NKN!-8P[:^1&F)KH.%-<=9'G\C7/I(Z5O\*:8\QU,
M'Y5Z<.WGRZ>@(2?A1.))97 Z&D@11K@M$1(@Z5,NJXLK!;CG6;32671RPH%2
MDP#J=JUHTUZ5F83<V[EJTRVZE2V\P*9DCM&M%#B'DDI,A)@GQH4P3)TI1TI-
MO(<6I*3)3H=*27$J=4V#*@).E LI)V% M1#R$9"0>HB!1EQ/-#8/:B:2W$H>
M0DSF4=(%$'KX"BZ4#KB6<N<[F `)HG74LHSJ)B>E`0]E$!TTIE*"6RLS`$FG
M0K.WG$A)$ZT003J/C6=A&KM^"3/I!ZUHLJ#P!23$Z3I5'"4_6X@#_P`2>M9J
MM(#_`%-("?\`YH4N)4\6P%RD23&E$7$I?#)"B2)F-/?3:)"*8CQH774M+1F"
MB5&!E$T[RN4T5$$[#3Q-`ZBI*"0)/0$[TF2M322L0J-0*<KRM%PYH DB-:31
MYK:5P0"-CO4-'B*8`FAMW1<(S)2M(G98@TS;H6ZXV$J!1$E0@'RH>4D;ZT\"
MHRZD7')RKS1.8#L^^B<=2TXV@I<)7.H$@>=$TS<>(^AUA1(^L1M^E2>@<16H
MU,6QU/Z0HN(01@[D3^,;_6%!<E*>(+9:I.6U43EW/:J>VITU0D 1K3P/;3,K
M#C:5PH ]%"#3-.AP*.5:0"1VA!WJLC)RB>^LW']<-;,_[PV?C6@EQ#KJF\BP
M4 22-#Y5F<0/);M;9@MN$N/H(4E,@:]:EZ6=K-\[>MNI%LPTXF!.=415Q,E"
M9@*.XJG?XBBR<"56]T[*9EEO-'G5E;H1;%XH64@3E UJB4"G)@:&: *!9"X(
M!3,'>F9<#S0<"5)!V"M#41)/C31KN:!IY+Q<`0XG(HI[0B?$4P>2;DV^1W,$
MA6:.SY3WT#K+@6V$)"DJ)"R3L*S</'^T.,Q.G)/PK26Z&G&D%*R5J@$"0/.L
MFS<#6.XVM06H`LB$"3J*E[BQK7!BW<U^R>M5<%&7`\/U_P!W1\JLOC^".'6"
M@G>H<(!^A;"2?XNCY4]CG^/I.#VB>ANT?(UU0T2D2/5 W\*Y'CEY#V#VA2%"
M+U(A0U,`UUB7PMY30#F9M()*A .G2GNK?XQF7BO]IL,&D!IX;^ K6 ,G70]Q
```

```
MK*O)/$N&`$ZM/$^X5IN/(9RY@LA1`[(G6K.BN0X:)'%>.;:.K'^(5UZYR+.D
M17'<./)8XDXA<6%94O+G*)/K"NS49:41.J:DZ7+MD<-3^]NQZC*J/[QJEQM/
M[W%@;EYO3^T*T.'/_3=CJ?5/S-9W&+R7N'UH09*;AM)D=<PJ7HQ_DV+0J-M;
MHY9 #"#FD0=*AN#..8<--G-/[)JU:.H-O;MI/:2PB9'A5>Y5&/X<.H0X=OS3
M5M05^8PVY,:!I1T\JH8@D(X4=[O1C\C5S&;AJVPBY4XL(EI203WD&*KX@!^]
M5U)@_P`'@Z1TJ7VL:-N(M&($?5(T`_-%<IQ*">*,"$G^<^ZNJ94E%HR5$ !I
M)/\`=%<KQ XAWBC %I(*5)601[*M:Q[=8VXE[FD!8"5*3VTQ)_97+\&C,O%#
M)_C"ONKJ6WFWEK4A07E44D@]:Y7@DRUB9F1Z4H"K[2?QK?Q0D85>ZZ%A?RI8
M<B,)L^GU"-/8*;%2@X5?(SC.+=9RSK$4]BI*,/LD*6D*4PC*G-J>R*>STY[B
MP3Q!@2>]2_=I5[B?$;9BQN+5Q:@ZXCL@))!D]XTJCQ,DGB7 `1KF6?E6KQ$X
MT,,N6BZA+A2(25C-ZW=1K\:3?XE'6$B=?"GF?_FG">R .@&](31@(@R)K)QQ
MYJV58.OJ"&4W`*E=!\*V((DUFXYA"<:LDVRW5M *"LR4@TJR>7EK[[0QIY^.
M8R;E2XCUDYO&NO-\R&,4?;Q)I-B]:+%O9)4H%!C;+$"=??0*_<]:CLXBY/YS
M8_;0G]SX:$8A[VO\ZSY=K<+[276(V3F)7RDW#92IZS@C8@`S[JK\07EJY9.I
M:?;7^$%*(!Z9AK[J1_<_?RG+B+?M;/[:`< 7.I%^QIWMJJZK,X_JWBC[.)'$
M\+M[AD7%P6EMJ6O*@A(UU[ZV;%HLX\6U%)4UAS"#EU&DUAV?!M]8NYTO8=<)
M*8*+AI:D_"MO!<)O[*]N+B^N6'BXA*$!H* 0D3 U'C3R9:UXK<@@:B@B=_@:
M(ITTU]M(I,F.M:<T#NB%&>AKR.\E5T\?SS\Z]=>3%LX>Y*NOA7D-V9?</YQ^
M=:].F"H1VAI4C2<SNO?49C..XU+;P7AWS7+/IZ,5NSB%1W557)*AXFK-D=5^
M(JNHP5#Q-9P[7Y$*9-;W"X_#MM.HFL)(UK;X;448U;P8[5>G#MY[7HR1K'A4
MA$(5MMIK4;9).LU*9"%1KIYU*XJ.$J:]":2%HS@N2D*U]<]*O@0F`(K.P>S8
M:8#R&P'5+=S+ZGM&M,3$46]@"8!C36EEUHO(TQJ,A*8(-,HI"T D`DZ3N:,Z
M]:%;22I"U@9DGLDU01&W=3Y9WI0>AHAXT0X$==_"GRZ;?"FCQTHA-2AP"= /
M96?A`^NQ#3_>#-:*0<PCOJAA7\8Q`$C^,;>RI5E:0 )IP).@^%,!!TBG$;T0
MY3M^RD4[B/93Q$:S3&>F_?4"*@E)*M$@:S3H*5M@I,I(D$4Q2"DR)$:@TD )
M0 B(Z"@("!2B3H *<:#0TW7K1 E.I[Z/*".E-&OC100-Z#+X@TP9S39QOI^<
M*"X!'$5H!_PQZ?G"CX@'X'<UUYC?ZPH7D9.(;3QM5?K"I5C6`I99(I0.^:<#
M6JR8Z*K-QU/\`:(!CTAO8>-:<=K?2L['4_@YO?\`C#9^-2]+.XL75[:VC@2^
M^VRHC0+,35E)2I$C4&H+EFW<6%.H:4J-U@&ID@!(`B/"J70@-Z1\J>.LBD0"
M>E1"@":03K-(C?6FV'A0"5H0M"5*2E2S"?&LS#@1C^,@Z@%J!_9K44VVI:%*
M"20>S.]9>')GB#&3/VFOU:7M8T;C2U=)'V34&% _0UAXVZ.GA4]T/X*],>H:
M@PI.7"+'41Z.CY5%],#CR1AMC_W:!M&D&NJ(,@S)@?(5RG'?\G6$?\6B=?.N
MM,#3K I[JW^,9%U_ZGPX1_-/?(?YUL(!"@8K'N=>*</UD!EW3V"MA.^]"N-X
M5G]\F/QJ"^O]85US@^K7)^R:Y/A49N(<?(.UPX(C\\5U;H467 /R#2=+EVS.
M')_>U83'J';7J:I<:))P)ON#[>G?VA5_A\?[-V$'=L_,US_&N).(?L\.@<M:
MDN%4ZR%"I9X,?Y.MM5 VK"<PD,HD#II52X1FXBL>D-.'X5<80E++*PD9U,H!
M(ZP*I/+/[Y+).GXERF22CQ81A5Z5:_4+W_1-5<2UX8=U!AC77P_SJWC"B,'O
MM]6%C_":K8H<O#K@,ZLCY5+[6>E]H#T5D=.4D;^ KEN($_[7X$!]E*P*ZMHG
MD-"((0GY5RN.YE<:8&)/J+TK57'MU8",RR((!,P:Y3@839XDHC>Z574I:0TE
MQ" 4A2B3ON:Y;@0SAEZ3UNE5?:?UK<QB$X+?KR:\A8!Z[5-:MH]"LR4@E+*(
M)_1%08W(P*]UCZE6OLJS:@^B6XW :3\A4G9OPYCB1)5Q7@*1N<Y^5:7$ULTY
MAC[A92IU.6%99([0K.X@[7&6`IUB%FKW%%FTYASSRB[G!2F$NJ2#*^Z8ZTGM
MJ^FYRU;!*HTZ'NI9%@;*]QK/.!V0( <O0!W7SP_]]/\`0UJ=KC$1X^G._P#E
M597H5/JJU\#2*5'H1[#5#Z'MP=+O$0>\7KFGQI'"FP3%[B0__NK_`&T7PN]K
MJ#[J1!Z U1.%@;7^([_\4LT'T6X$]G%,1]KY-":_5\)40==:41YUF'"[F-,9
MQ(>;H,^\4QPF\5H,=Q #^P8^%//X:_UJ:33A.M9!PB^)$8_?;;E#9_\`;3_1
M.(@:<0WO_P#BU^RA_P"M<F2"._PH5 0=B)K(^BL4UR\17([LUJT?NH3A6,%1
MCB5T#?6R:--KX_6C<"+5\C?E+(G]$UY"^HJ=4?&O1;O#<9;LWE'B)2TAI1*?
M06QF`29$C4>=><.Z*,G6>Z*W.F\(@/K#SJ:V'U_MJ ?C`:L6HEX>=<LNGHQ3
MV1U5KN*KJ]=8\34UD>TKRJ)1[:_.IAVOR=(D[Z5LX <N,6\_E5CIT-:N"&,5
M8\37HQ[>>O2T;FIHA)@=#424ZGSJ8CLJ\NE2N+)P>RR!5P7WE%3KO84KLCM'
M85KS`TK)PIFX"WEK?EGTAW*V!MVS6P`(TJ+D`"3XT\0:>--Z0%$\!C:HW6@X
MXVHJ5V3L#I4_<:!ULJ6V4J*0#)\:(>--Z?I3D44`U$,-IG2G2(ZT0U%.$R1.
ME"DD]H:F*SL,GTK$#)/U_P!U:0$&J&&A/I>(;_CNM%: Z:FG!VUTIP!_H4@!
M-1"().]$=MZ0'6D0/:*(%0"T%)V(UBDVD-MI2D& *)0*D$ D2-P-J9ALI:2D
MJ*B!J3O0$-O\Z8F*("-*8B2-*!I.XIR3H?OI0-J*!097$! P=S7[;>WZ5-<$
MCB&SG_AE#?\`.%2<01]#NC7UT?K"AN !Q%9S_P`,KI^<*RL:@'^IIP=:< 4M
ME"JR8>L?VUG8XH'#6_\`KH^=:D:Z5F8\G^ -=/X0W\Z7I9W$E[AUO>.A;J22
M$@"%$15Q*0A(2-A52^LG;IU);OGV`!J&C$_"KB4Y4 %141U.I-"E_K>E/2C@
M4@GSH@<W<:8B3O\`&C(CS\J$;T$:VDN+:4HG,V93K6;ARHQO&@3KG:]G9%:;
MC)4ZTI+BDA),@;*\ZS<.2/IW&H,PMO3N[-3VL7[LD6CQ_,-18:(PBR']0CY5
M-=@>A/DC4-FH\,'X)LCWL(Z>%/9Z<UQW*;+#NH-X@?.NM(@B3K ^5<KQV!Z+
MAAU/\-3T\#76'4SM('RI.ZM_C&0__P"J;'N]'=.WE6NF,P[JRWA/$]GX6[GW
M5J)]812%<=PCKCN/Z_[RO7^T*ZM_2W=,_8/RKE.#A.,8^9_WIS7^T*ZRXTM7
M3^8KY4]-7MG\/B.'; 3LWT\S7(<<I_VAP_IV1T_.%=C@(CAVP'<UW^)KC>-Q
M/$MAK/93^L*E]+\?\G=6[65"' M1S,H!!.B8'2J;JHXFM)@_P=P[>57V`O*@
ME0+9:0$I[M*H.G_:JUUU%JYU\15K,2XP,N#7Q/\`0.1_=-08PF,`6#K]6D:B
MIL:TP6^.\,+W\C4>,@IP<#?U!\JBSTT4#ZIO3["?D*Y7&M>.<%2$R>6KI75#
M1I.VB1\JY;%(/'V#A6X941'MJU<.W3--EIM84M;A*BJ5&=#TKEN #."71C4W
M2OE73LAT(5SR@KS&"D=.GMKFOW/D@\/O*[[E5/:?UK0XFQ!BTPE;3P,W1Y#<
M`^L9WK48!3;L@[\M'ZHKF>.D3;86!UO4??74H3#+>GV!\J3LO4<KC@S<<X$(
M_FU_(U=XE9=-JX\+E?+SH!9RB#VQK5/&$@\>X,DC9E9^=7.(A?9 D"U-FIQ$
MF%<R<WNBD:OK3=494=Q-,FB4G4Q--H*K`5?Z-,=A!HXWJC>WBV'6[6V2A=Z\
M%%I#A(2<N\D;476UE0)'^=*")[O94%M<%;"E7">2XV<K@,Y0? ]14R7&U-)<
M"TE"S"5 Z$[;T"B0=Z0$$4LR!FE0$"3K$"EF04Y@XG*=CF$>^:&CY=>M/!D:
M=*8D)ZC?>=**-MC/<:*8Q.W2A(W(J0B.@J-1UV$11?"IB!RX==&!HPY^J:\@
M?E3BC'4UZ[BG9PJ\.FENO]4UY$]ZQ(.]:]-X($^N*LV0EWVU73JO6K-B/K9K
MGF]&(K,2L^5"0.8X?&BLO7(\*C7^-7'?6<>US!]JM+"#&),F-E5F#UJT<*TO
MVI/6O3B\]>HGUS$[GYU),I5Y4!T61UGOJ004D36:XUDX7Z7SG4E+(MQ<.Q!.
```

```
M8]HULUD89<+]*N&/1W.6FX7+LB-YK1M'U/.7"5" VH)3XZ34]-6)J;:H&W5J
MQ%UD^HEO,#'68I<Y9Q(,1]7R\Q/W5&=58 /2(H'>82WD`B>U/=X4#[JD73#8
M'963)I7;JFEVZ4;+6 ?*J+$1TI\N^E07SJV;8K;U7( '?K17+I:LUN) *@)
MG>B:3#K2V&N]1-N$VG,5ZV0F/&FL7%7%HVMP',1Y5!,-2/V50P_^/W\?T@/P
MJS9N+>"RL1E60!X345DG\)7\G[8H:TO@"?&G!!-50^Y])<C4M<O-/CW4[[SB
M;YAI)E"_6@;:Q1-+>T4C56^=7;A@MZE;@28U@4=ZXIBQ<<0)6D"(UZT-5,J<
MBLL3&D]])G/RQS8SQK%,VI1MPLQFR3KWQ0V*UOVC;C@A2@"0=.E$\IQ2(COJ
MK8/+?0XIT:I<*1I&U$P\M>)73*A]6WERF-Y%#2QUBE55UYU.)-,I_%J22:5Y
M<.,NVR&QV7%$+TZ1-#55N((.#/?I(_6%-<?^H++37T97ZPJ3'Q^!GM8U1N?S
MA45Z<N,VRTGU;593(\14JSIL#432CPJ"P<6]:-N.2%J$F1%-9NK>YI7]EQ21
MTV)%&=+*4CVUF8]IA[7_`'#?SJVR\M5_<-*_%M@9?C^RLOB6X<0]86Z3]2Z\
MDK,;1/7V5+TLGF+U[](<T>AFW"<NO,2=_"*NH!R JC-UBLW&+]^R<MPQ:K="
MUI!*>ZKE\\IFP=?;3"TID)WJFO"Q[-*0%1MN'T5+NR^7F]L346'W*[NS0\ZF
M%JW&U$TLD:;4T:=*KV%RY<F[YF@:?4A(@"0*9%PLXN[:E/U26@L&>LU#53++
MG-:R!/+GMSO[*S<-`^F\<@Z9VH_NU>?>6W>V;2/5=40HQM$5EM/KML4QI2 2
M?2&$[="!/SI5D:E[_$'_`/IFAPY(^BK&!KZ.CY4=_P#R>_W\HTV'",*LA.GH
MZ/E0].:XZ'\&PSN],1]]=8I$G3N^ZN(XJN'+W#,*=6 #](A)`[A(KK[>Y6]B
M5ZPH#(QD"3'>F:D]M67C%1Q)_?-:SI%NY\A6F )C>LYP3Q/;_P#;N>W:K-S<
M*8NK9L1#BR"#Y4B.7X,2?I3'CWW;GZPKJKD$6KW_`$U?*N+X=NEV`XBN&QF4
MF\4`([UBNVNA%F]_TB9'E2=-9=J>"#\`V,S^*^\UQ7&?_JJS3&P1\Q7<8,F,
M%LI_HOO-><\0WJ[WB](6`.2\EL>("A5JX?R>E,ATD!24AL-HRD$R=-:H+"AQ
M9;#,?XFLG7Q%7+5]3K[[) RLH;@^8JHHD<7L'_D5Z1^<FE3'5OE/CC:Q@=Z2
ME1')7^J:CQUIU.%I24J]=L:CRJQQ-Q%]'X<R56Z5I<=#2@3&X.M7^(<5;%HV
MH,D#FMZ>9%9W7UL/_C_^.R6_-K_Q!!2D`[@5RN)C-^Z'A([K<G3S5778Q>_P
M5VX0V!R6RJ"=X'?[*X^X<+_'^#NY0%+L0O>1KFJU\[/'##.S"[GZZ="G%LDN
MIRJ!,B:YG]SV1PLI1TFX5T\*Z"V?-WAY>RY"H*]D5@_N?@GA1)DZOK.U/;GO
M_E'QN93A"3'\<3\JZG4)0/S1\JXOC"\YN,X9AY2!R[A#F:=YZ5URKDMX@S:Y
M0<[97FF(@"K.R[U'/8E)_=#P@ I_$*/ZU7,=?>6$VZK5?+4\CZZ1E]:8JBEV
M,W[I&&I$@BU)U\UU?QF\;6INUY;^<O).8M=C3\[V4BWTV%;G;W4($"I%"%'>
MFCQHP$BJ=VTP^ZTTIP(N(*FB#VO95T@SI56]LF+^W+-PC,V3J 2#[QJ*+&6;
MDWJ+5IQ(GTQ5N^G9*H028\) JM?M(9Y]NRV&V$7]N$-I&B00":VG[:T58^AJ
MR):@"%.0?.9FDS;6;-CZ(@H+!!$%W,8\R9IY:8^--I]+Q4%/^YM"">\U,]9L
M*N['#"R#9FW4I3$=DD$15AC L)MFWDMH,/!(7FN%*F)C4GQJS>6-M?,!MZ<H
M.A0YE4-NH\J:-QB8BAXFPPW#G;=]+RW@INX)*,J4@Y3E$B*T\!9N;>T=8NG;
M52D/E*$VJB4-) $)UUT@[U8>L+=^U%NM)Y8U!2J%=V^]6+=E%LT&FQV G<F2
M=(U/7:FEWXT,S.O=0*.X\.^I2![*C*8&L549F-$IP2^/]2H5Y&X>T9KUO'].
M'\05TY1^8KR-S4UKTWA (WJUA^J]NE54>MUJYA\YS'=7//IZ,0V?XW0]*!W\
M:L>-%9D<T4+WX]>O6ICVN?2$&%5?PXQ>-D23.G2L\$9O;5RQ5%XV?&O1B\]>
MM*$+(W-&GU3UH%'ZS0=!1@0*S>W%F8==(%Y<V\N9^>9[!C77>M=*0F<HCOCK
M65A[[*+ZZ94L<PO"$]\BMA(J>ER,$PHGJ1J:02 K,!KWT43UIXJ,A*02#&HZ
MT#I0DHS"23IIM4T$G:A=RH"2J-3&M E)S !0D=QIRD*$'4'<4\:2/E3@;T0,
M:1T[J)"0! T\*0%/$>= DB!X5GV4_2=]ILI/6M$#7K5"U'X6O9,$Y3\Z+%\(
M$YHUC>G"!G"NHIP-.M.$[5&2*08D21KK24D%)&\T]/&D]:!MD'R[J9I:5MA2
M00#MTI]>[2DVM*T!2(([Q5!(3E! $ ZTX !GJ=S22)IP(J($@%8)`G::(I!(
MF-*;8T\309F/Z8(_K':1O^D*5QKCM@`)EA0_Q4^/I_ MQ_9.WYPI/D#';"0=
M65#_`!5*U.FFD!(``BG2`)@4@#W&D!N:K! 0HF-]ZS<<2GT)I662'T08\:TZ
MS\=_DQLG^G;^=2]-8]Q-=7=O;N!+N<F H$-E7Q%6-'&]1F![^M"Z\RT0',B3
M`WJ5,%(*2(\*J%E 2!&D;4P2$B$B!1 @Z4T;=U$,$I23E $ZDCK394E6:)/?
M1'2D*",J;2\T%CM&<NFU9N&I"\9QS,)EUK?]&M64A:$F),@5EX9(QG&YD?6M
MQK^;4O:SVNWPC#KCP;--8?R99@]&$#;\VEB*LN&71B3RSUJ2R$8?:&/YA'RH
MOIRO'*4H:PA"1"?34F!L=ZZ]3:4N*( !5$D=:Y'CLC\#IF)O4 UV#D9U4GM;
M_&,A03^^ACPMEUIJ;2M:2I()!TFLU4'BAOPME=?$5J@@*$G2I.DOIQ?!:$O7
M..AQ*5)5=K]83/:%=5>&+&X/<TKY5R_ P^NQI41-XOYUTU\H>@74S^)5MY&G
MIK+^2/"DQ@MF`?YH1\:X'BIM#7&K`;2!):4H`1))KT'#1EPNU Z-"O/N*Y/'
M; UF6?G5K6'\J]$;+*EK#93G"4A<#PTFLPB>,&]-K%73O6*UAEDF`%0`8K)
MGC#RL#Y?C!2L).(F6W,#N"M"5E"<R21,&-Q2XD,6+(!WN&0?>*+'0#@MR/S8
MH.)50Q:IF)NV1\:E\-3SII.H2I*D+ 4E6A!&A%<J^D)_=*PY( "4V8 '0"5U
MUJM29KE'-?W3+4QM9SX;KJTQKH):^CG%,0&PA1&7;:L#@!/^R+9!@EY>@K?N
M0$6#X2 $ALZ :5A\!I".$+<:ZNK-3V?U4^,66QB.!N<L!U=T$E<:D::5UJFF
MR\'<H+@3&8C6N6XO&;$^'TS(]*_\:ZQ2<I.M6%ZCEGAF_=,L^Y-I]ZZT<3NK
M=:F+9-PV7O2$RWFUV[O?6<K*/W3&25:)M)U_M5J7K;#PL;AMMLEQ\$.!`D]D
M]:1;Z:J_6/G0^VD=32(-&3:Z[TQ'C1$'2A(Z]U!Q_$26VL5N+]YLO-VEN@AA
M1(0N51K[ZQK6\PS&<0P[E6JK1XW26W+5M:E(<;ZDGIW5MXXVY?7&*8=;)+EZ
M\RT6V<T%0"Y)DZ5A81@-QA6.8:;X\B[-R)MB)5EW"I$CV5';'6EK"L%NQC-[
MZ997?H26'BV7`L)!$1!H;&WPY[ L3N6[VZ>NF;<*+2\P#*I@$'K4G#N*8A=X
MQBK+]X^XRW9OJ#:EDIT(Z>VL_ !_L_Q0X2=+=L>]1JUJ[]NWX:)/#5@M14HJ
M:"B5&9U-:V^D=*R^'0&^&<+2=)MDFM0B"#&M(Y7LY$1W_P"="1M3[Q3'K_KO
MH1E<1B.&L05^8D?XA7D;GK'6O6N)R4\*X@?!$_WA7DJR)K<Z=, )TD]:LVCB
MFR,NYTJN.IJS9-%P9AK&M<\WHQ#:F'013/CZ]RFM=74Z43T<]8K./:YJXC-I
MO5JU,/H/<:JJT7X588)#J?.O3CVX5ZTA4Y3WI2?@*G2)T!JI;JEEONR#Y5<;
M$5B]N%9V'MH&(WZU(0%<U$*C4]FM=.E8=C9LN8WB-PM!+B5M$',=.QW5NI]H
MJ>BG`FBC6F%%&=$3L:%Q(*051H9UHR!O0.MI<2$J&QFH" TI]C3@=D4\>-
M`FG2)W^=%309TVHA^^J#`_#%W^BGKYUH'K5%D_ANYU/J)/SH1>&LGI1#QIJ<
M`T0A2,P=J<"=Z1$4##:#L:382E&5```[J("1'?0M-AIL(3,#O- 8IZ9)-%O1
M`FG$SIM2.E/,"*#,Q]0&"W&DQE/^(4S\'&\//]2K]:BX@!.!W7DG]84+Y(QG
M#X_HE#XU*U.FJ-A2'?1":;>:K)3WUFX[_)Z.[GM_.M.8K-Q^?HM&T\]O4_I5
M+T3M;?M6+A8+C*'(`]9(,>53!.5,!, 55O+!F\6%NJ6"``,JB/E5I*0A`2-@
M*IL4^%-[:4;4B*(>-Z&#3SK3R: 0TE3B%E,E.QC45EX7'TQC:NI>;C^Z*TEM
MYW6UZR@Z16;A4C%L:VU>1^K4(MXF?P7=&/YLS1V>F'6G_01^K4>*DC"KL_U9
```

```
MJ6T@8?:CN91\J>U].5X[U7@J8_WQ/WUV+DA:A&M<?QR)=P7_`+Q-=B[HM4]*
M?JW^,9*=>*!O_%36F/6'PK+2HGB9401Z,.GC5N_O4X=8NWCB2I#0DA.YZ5)T
M7N.7X&'\L*_YQ?SKIL0_DR[/]0OY5@<$L/,-XFE]M3;BKDKRJT@'45O8H8PJ
M\.T,+^5/ZM9?R*R$8;:_],5Y[Q,0>/[>.BF/G7HEF FRMQTY8W\J\_XA2#^Z
M$SJ/QC'7VTOI<.Z]$0TAM:U)2 5P21UTK*3KQ<H]!8#_`/)6FAH-.N*E1SF8
M/3RK-;_]7/\`<+%,>?,-6]L0>/3]#NQK) ^-!Q.919)_YYD3[:+'B!ABN\N(
M'QIN(Y"[``[WS,QYU*U/356#S%#QKE5#/^Z4VG<"S ,^:ZZQPRXKSKE$)"OW
M1W =A:IV/Z57V8^-MN\0EC"+A*1 2T0/#2LG@;7@^U@$#.N??6EB8Y. W4DD
MI9(D[[5G\%)2GA"STW4L_&GL_JI<4@''^'4C^G4=?--=:H=H^=<GQ,)XHX=3
MI^-6?BBNL7^,5M,TA>HXWB^WP\6.*7F><0:2TE).BD#,=CW'6CPVQN;=."J<
MP]AI!*0'FW9)[!W%.NRM<0_=`NF;ID.MBV (/]JKXL38WV%M-W%PXPA>1*'"
M"!"%>$]*D=+?&F]OK3'NI:&E.M5R,8TIB*>!O3:$>-17$<2<,XMB6.*O;/E)
M1RPD*+N0UDKX*X@+J7%+:4I/JK+\D5Z81%(B=>E'3[+'F2>!L?;)4.4DJ$$A
M_4BD.!L?2VM*`R L:@/P#7IA@@&GTG2FE^RJF&6KEGA%E:O )<982A0!D2!5
MN-I'6F/K#<C>G\P:K!I@01_J* GM=#K]]2$`)T%1JC4GYT5B\6J X8N_-L?X
MJ\H6=8ZUZCQ@YEX:> /K.)'SKRY1WK?ITPZ,GK/=5ZPT:5Y502HY5>57[,Q;
MK/A7+-Z,5:UU>34CXBX5W5';&'1W34ES_&34QOF+DK*]>IF3#B3XU$J NI6]
M%@QI7HQ[<*]6LC-FR8^P/E5Y`@SH?+RJEANN'6I[VQK[:OI'AM6;VX5D6UKS
M,<Q!Q3JP$\HA`T&U;J?.L1#;ZL<O2V]D;RMDIC4ZFMA*5![,5')$90.M9G2Y
M5+.HHMCTJ*%EU*LW8 ,IC<TZTN*4C*K*D&2.^C*0B=/&@=;*T90H@3TI.I6K
M+D5EU$Z3I1/9RB$F#.\400T2!3DT"LQ:(0>W&AIQF2V!,J U,=:(0WHHH&@M
M+?;5F7WQ%,R''`#S""9Z"@D W%443]-NGO;3T\ZMHSAQ94>S/9'A5-,C&W)_H
M4_-5%C1BE$T*@X74Y2,@&H[S3.ATJ0&R`)[4]U$20:?84#O,R@-$`SK/=26%
M\E64CF1IYT1(-C&XH&$*0T$K5G(ZTF\P;&>"J-?.DSGR?61FH)!]]*@:"RM9
M7&6>R!T%(<SGF2GE1IWDT1*3M2WJ)9=+S>2.7!S4[Q= 2&XWU)[J"AQ #]"7
M7Z(/^(4%Q/TQAVA)+:@3[:EQW7!;H#4Y1K[145S_`"EAA3ORU1YS6:U.FO2F
M@9SY!S",W6!3-<PE9<CUM .ZM,I!IM67CX!PQ)Z\]OYUHI+G.5,<N-([ZRN(
ME/"R:R)'+Y[><D_G5+T3M<O6+I]:56]V6$P`0$!4U<1(0 3)`JI=JO X!:I:
M*8U*C4Y+WH\I`YL>RJ5--,3K0@KY0T&?+KYQ3-%PMCF !1WBC(Z7C]]1-*=E
MSF@#M=F.ZG27>>I)`Y670SUHHLJR\V4KA()S)C>LS##^%\:']>C2/S16D5."
MX;R@<O[1FLNQ4L8EC!: 43<(F3TRBI[6=+>*D?0]Y/\`1&IK4?P&U\64'7R%
M5\844X/=Z2.621WU8MR196\`Z,H'P%/9Z<KQO_&L$_[Q.U=@Z3G5WS7%\7EQ
M5S@?.2$J]+3H#XUV&9XW#X=2``KL&9D15_5L_P"8SFC/$[H/2V'6@XE)_>]=
MIG<)'^(4;)GB:Y\+9/SJMQ6X^C!7.4A*D$ISD]!F%3TGN+&'#\)XGI_.)'N3
M5C%3&$WI_J%_JFJEBMQ-_BI:3G5Z0!!.P@59QA0^AK__`+=?ZIJ7I?:>VTM6
M--FQU\*\[QLY_P!TAL=SC'R%>C,$AAH#H@?*O-+\O.?ND(+J`E?I#0,'<0(^
M%6SIOX^Z])0'4N/<Q84"OLZ1`[JSF3_M7=D;BR0-#^>:T$*>+CW-2 ,YRD'<
M5GVYGBB^T(_@C8G^T:7TQ*?'2?0&^DOMB?[0H>(CFN,,2= ;]N#/G47$:WTL
MV:4(!:5=-A2LT$:U-CISWN% Z_P])^"JE7\:JB%+4>\UR]NG/^Z'<ZPH6R0#
M[%5TCZG$I464@J"M`3'6N6L5N*X]Q%02,Z6$@B=)A56]M8^VMCJU-<,WA=4%
M+#!!(&YJ'@\1PE9=/6_6-%Q*L_O3OU+$*Y&J=]9%+A,1PM8]V54>\U)V?T9W
M$ S<88 #N%+/Q175*]=7B2:Y+%%/+XZPA+K00A,EM05ZPE/3I74)4\;IY*TC
ME@]A0._?5AEU'/8:0OC_`!*1HAI(W\ZGOF,57BEFEO$&$ NJ+<L`Y>RK?OTJ
MK@IGC?&U3LE CWU?2]=N8_9HN;="&@IPH6'))@'I'C21;V8VN/N *&,6H/C:
M1_[J-5GQ`C_^8M)Z19__`+5JC0:4X([MJ:9VR$V>/"?PO;?_`&@_\J7HG$!T
M.,6A2?\`D_\`]JUIGRIB9ZU-&V0+7B"8^E[73KZ&/_*F-GQ #_*]IM_P?^=:
MT^ZGF9JKMDJL^((_E>UU_P"3_P#VI)L^( 0?IBT_^S__`&K6.OG2$;Q09 M>
M(8$8Q:?_`&?AYU(;;B"3.,6L3/\`$AX?G5IC3RHY.I'=09/HG$!)(QBUG_L1
M_P"51^A\09?Y9M=?^1'=^G6R?*F@:#*--J*X3BUK%6<*1Z9B%N^TIS1+=OD,
MQWR>^N%7K7I''L#";4$;NJCW)KS=>A-;].N'0!.157[8?P59F-#5$_BS5]F!
M8K]M<LW?%38T=3W5/="+B>A%5V/Q@GOJS=_CD>(J3MK)67ZXBI$:$=:!7K5(
MDQUKT8]N&GJ^$"<)LU:ZH^\UHA-4<#3FP*S,[H/S56D$F-(K&7;A>V/#XQRX
M#*$%);25%1U !-:X&HK)NGS8XN5AM3F=DDQT@_YUI^ELI0I:E$90DD1.]9G2
MU,13@14(NF2H@+V643!W%"F\95J%?9*MCL*,V+.TT+Q4&B4)E70341NV$B"N
M" #$=],Y>,H0HA4E) @#<FJFEA()2F=XU IX'MJ!N[94$=J"J=Q3^E,@25B"
M,WLH:J:D!%1>DM F5#04O2&<^7.-X]M$U4N_LJD2!CAUW8'S55GTEF0,XU)
M]F]5HS8FFX3 :#0"EG03K46-`FD/]:U#Z2SL5@: ^RG-PTDZK U ]M5E-.M(
M]:B-PT2 %B28\Z<OM@#MC68]E!(DC:@96M:96C*9VFDEUM0!SC:?90,W33J"
MH+T&NM#2R(I'I48>0)S+`,Q3EUN8SB<T>VB"F *;-KWT)=;!`*Q)) ]E.EU!
M">T.T)%!2QS^1+N#_-@_$5&\B,0PH]Z"?C4F+D.X1<MMG,M;<I ZZBH+MU+-
M_AJ5J"5 &1U%18V1M2&M1EUM.8%0D1/MIPZ@$C-K,>VJR*-=S69Q`)PH:C\<
MW^M6CS$DP%"9BLS'G$?1B3G$%Y$:^-+TL[BU>73MNM(:ME/ IW20(JVDDM@D
M02-JH7F+6EFM"77CVD%8A).@W-74O(4@+"AE(GV42I!M2%#S$Z]H=D G6D5I
MU,C0P:(*E3!0[QH8]M-G28A0U,4#*64NMI"20K<]U9N%0<2QGP?3^K6B+AL/
M--Y^TY.4=\1-9V%K1](8N<PU?!]PI[5/C$?0UX/ZHU8M_P"*L0?YM/RJMBXS
MX1=I$DJ:T">LFK#2TIMF9.6&DR.[2GL].4XSUO\``QJ1Z4@S[:[)P$.*$Z@Z
MUQ_%R5+Q?!&D)*EBX2I0&L &NM<4.8H9AZT;]:?JV^(S+<?[379.@]'1/O-1
M\3JCAZX\5('^(45NI)XFO!F&;DMB)\30\2J2<!= 4F5*1$'>%":GH]Q+AB<N
M(8M,1Z3O[*/&NS@6(&=?1UCX&H,(6E5YBIS)@W1/LRBIL7'-P6]2V,RRRH #
M<R#37A;VN- !MOH,HZ>%><8A*OW4`/Z]G]45Z1S$I2D%0D!(/G$5YU=-NJ_=
M.DMJR&X;4"1T"0)IORU\=\UZ"A:G''90495E.L:^-9]MKQ'?$_\`#MCXFKS=
MTU<.N\I85E<4V=-E#<5GV9!XCQ !8)Y2(UZ2:M[8@.(C%I:1J3>-`:?G"I<:
MTOL'GK>"1[%5!CY"FL/!4F#>,JU/3-_E4F,91BV%2L BYDZ^!J+&LK4DCSKD
ML+<5^_3&5I25J2A/9&YT-=65#,4@]H$`^!KE,(5Z/QCCBW24E67*"-5#6GM<
M>JTN+%_[(7SD92IH0".\BI.&!'#-@G^KGXFJ_&#@5P;>*;.;F(0$QN94G]M7
M,"26<"M&U=E:&BI23N!)I[7^L9>)&>/,*3N$M*.OZ2:Z?=<^-<M>2GC^P4X(
M062E*B(!,C:NHS)S#4:*@^=)TN7IR?#^O%_$*]-%I&W@:TV[E3^/VR'+5;(0
MA9"E$$*Z=*S^&D*'%'$0<!2M3H4E)T)$D?=5^WQ"VON(;=%NM2BBW63*2-)B
M=:3HL\UL`@"EM%-D@T43MI1DVE4L4Q!G"[/TI_1H*2E1[I,5=VWK*QYANZMK
```

```
M>V=1F:>?0E28W$S19VN/7;%O:JNG74I9"0K.=O"AL;@8A9,W*$%*'$E0U\:R
M^0]<I7A=TE"VF2OG(_JH.2._855P5M%X+'#7AFMDV"7<FQ"LY$^ZC6O#IPDJ
M4 -Z@M[@/EY*4$%IU39/?!BLC"75XI;84Q='FMOM/J<GJ$N@)U\B:K+#K#5M
MA]BRAQ-S?72.2ZLA*DI),$^PT-.H'K$'I^VGB1U@UFX,W<LM7#=REI"4/J2V
MTVX5AL".S)K3`B/&AK1$#3>A5H2>ZG(E.U"3.;36?OH.1_=",8;A\#UEN2?8
MFO.E>5>@?N@K^HPU&LA+A^('W5Y^L:F:WZ=<.@$0W)[ZT$&,.5 U)K/_`)OV
MU?5IAP/>:Y9=O1%%DC./.K=X)<:/A5-OUQYU=NCJT>D5F>FJK+/:%2(U`[ZC
M7JJC0=1H:],<'J_#BL^ VFN@21\3^VME*-.M8G"Q*N'+:=8*A/MK?2-2(_U-
M9S[KA>V/>O(ML98SH6OF,J@(!)TK4204I4$D9@-Q6?>W#=IC5HMQP!);<&4;
MGLBM))"@E:=01-8E\)9["I"3KUFFY:!TZ5*1%,1U@T91EM,G0:T+J4-M*64R
M`)@"IHTIE*2EM1.P&LT1&VE"VTJ"(D;&GY2?R1M%$@I4@%)D'K3C76@`-(V*
M1WT@TC-HD;S1C:G-!%RF]!E&T55=$8LPP1]6IHG*=NM7XJA<:X[:ZC\4K3VU
M"=K:F&]?JTZQ3\AHF>6)F?;4I]]-&E:3RC%NV/YL:2:7H[)@9!H"/94A[Z>9
M@F@C-NTH92VF,H3J.@H4,L/)40A*@3K4XH6\H!RQH=8H!-NTK=L3FS;=:86K
M`*8;`RJD1WU-&M/,T3=0&U9)'U8[,Q[=Z0M68C(-H]E313D2!0VS\00+7#[A
M]@!#B&H2>X BJ-_9L7%YA+SK84LJDJ,]!I6EBW\DW<$?BS]U4[K5W!U="J/@
M34O:S]:7H;!)46P25!7M%/Z*R%!602%%0\ZE%/O6F=U FT90I*@@2DDC4]=Z
MR.(K"V5@N538(2XV!)/Y5;TUE\0J*<))C9UO]85+T2^4[K-BR$ASEHEO)VE1
MI4WHK"P2$ YDQ([J3[+#A074H40-U&IT0$C+M5TFT?H;`"NQJJ)U/2A59L*S
M2CUE!1U.]6*4U#:!-HPDF$;KS[]8H196_8['J+S#4[FK%*ANJZ;6V;+2,HD!
M02)UUWK)PG#K1.(8Q#4!3P2>T=B*W E"G4*4!F&Q[JS<,_CV+$&?X0/U:6++
M=4>))%CA=Q<L=EQID)2=]!4ILF+AI*W$9E.-ISD$B>M18Z8P&]'>W5UDS;LZ
M1V$CX4[-N3XA=58<3X3<6W8>N%I9<5$RF:Z==A;\U1R:\P+];K7+<7:X_@0C
M^>3^M78.27"21O1<KXC M+"V_?7B#P:AP-MJS2=S,T'$V&VJ\%@MSD=1E!4>
MJA5NSUXCQ+_HM??0\2'\$I_ZS6G]L5-31N[GE7P/"K)JYQ8M-0/2U(]8G2!5
MS$6TV&'75S;#*\BW*4J.N@UVI8+H]C!D?Q]>P\!4F.J'T%>?],_*GHMW5AZS
M8><6XM!)6$YB"1,"N+<Q6\5^Z0W:\X!AMT-!.4>J4B9/6N]<$&.G9^5>::G]
MU+_^T-/[(JWMK#WMWJ;2UYJEMI!(=4K0_:ZUF89AEFSC>).-M *D:YB=]ZVT
MH0A3A2 `I9)CSK,PV58GB:M(#H$>REB2W2CCF%VBCA0+4I3=MH':.Q))J?%,
M/LWL8PHK9DA:AN1I`J3&X+^%#OOFS[@:GO8.*X:(F"XKY5-++5CT&VSK5RA*
MRDJU/3:N<PQ]-_Q+B[M\I*A9+#;1,)RID^^NK"B0(KE.&<J\<XES@93<P9V]
M8T]F-\5+QE;L,<)//-)"5M.(<;4#LHJ ^\UKV;2+ZQMKJY2%OK8*%*VD$G32
MLOCK3@^Z3&A6V/\`&FMC#!&%V@_JATHN_P#F.?N%>E\;L88\`NTMV0ZA!&RM
M-9W[ZZ+T*W*E'E)E:DJ)\1M7,7J;ECC)_$V'$CE*8MUH*9*@OQ]E=AK,=U"^
MG+\/.*Q''<:NKKZQ=J]R&5$1E2%*TTWWJ^PNW5Q&R+=;:@W:JT0H&)4*SN"S
M-SQ 3H#?*_6-:;26QQ/F0E$>AZE,?ETGF+EW6M)U-+RFE!C2D-*,&DU _:HN
M5LJ652TL+3E/6I^M<OQ!;^D8QSU*<4BUMDK-HA1!?E2AI!Z11J3;I#;I4IQ>
M0A;B<JE1N*I_0[*&6$-J>:+"`A*T'4IDF#(UK@4+MKVZ??L/276!:J=7:K?4
MDLJS`3,Z[U'=<.XY;VAN5727$A(66VWE*7$;Q1TX>MO1WL.:<;;0$NL\HDH4
MT8(G>A3A# LDVF9^$K4XEPJ[:5*))(,5YOAG#^+XLV'6KI")V0\\I*B.\"-J
MM7V#K&'8(FWSINWPZ'W.8HI$+(S$]$@=:+Q\ZV]'8M4VR<B<ZBK4J5J5'O/C
M4T[>=><X!AUYAG&6'MW#R7VW&W5)<:=*VS#9D3WC2O1X@GNFC.4U0G01K_H5
M&OWB)^^IO6FHU"8B=ONHCA?W05$N6*0#HVH_XJX50UKM./5DXC;H_);^<'[Z
MXMS2M5VPZ 3V0/&K[IRX<C7K5 S"?$UHE)N++*B!R]3/6N67;OBS4>L*NW?X
MMGNC7W521ZVE7KD_P=JI&KTK*$$14B09]E J8%&DZ2:]$<'JG!R2OAADP='5
MCY5T&O3:N=X+6H\,H'<^KKX5T*5$I]E3/NN&7;*Q#EHQFP6\4A #J95L#E%:
M8<1"(4F%:)UWJAB+2'<3L X@* 6LPJ(]6M!+:)00D0CU8 TK$Z2G<(2 5$#:
M*99"02HPGQIUMI7&=,@:P:9UM+@*5 *3XBHR91"02=!YTQ*5(G0I(]E$M 6D
MI.H-,6QRRW$)B(%$,B"A.4#+TBG!S"1J/"DVD-MA"1 &@IFT!M.4#2J'21KK
MJ*0.L#4]U)ML-S$ZF3-,EL!Q:ANK>@>0"!UK.NM,>LC.I0O:K_+!>*]9JC>G
M+C&'[ZI6*4G;1!!B2!YTNE ML+RDDB#,`T2T!U)!*AK.AH@^FXI3H*%:<S93
M)$]0=J=*0&P@;Q$]:!P>ZA;2E$A.DFDV@-)B28[Z%I ;*M2HJ,ZG:J)>N_LI
MQ(W.M $0\I<DST-(MRZE>96@B.E$HSJ:4Z4#B,ZT',1E,P.OG2>;YK82%E.V
MHHBOB@)PFZ&NK9JC<D!.#F3Z^GG!K0Q(3AEP!_1FL^X5]1@_BZ!/=H:E[7%M
M@1-(:S0,M\EO(7%+(.ZNM)""A:R5$YCUZ5I!`ZZUE\1 G"3&W-;G^]6CD/.*
M\Y(CU>E9?$K95A6?F+2$NMG*.O:%2]$[C0N;-FYREQ*R0(T41\JF0 A 2-A5
M>ZM5W!04W"VH'V>M3EHEDMAQ0,>M508,]]+6A""&PF=8B:9E!;;"2HK(ZFB#
MFE.N] TVIO/*RO,HG7I2#9#ZG.884(">@H'R)YR%ZRGQTK.PO2]Q7?\`C ^5
M: 05/(5G(2/L]]9M@C->XG"RF+H*TZZ;46>TF/*C`KR=N7O[:NLZ,-"9.1/R
MJCQ <O#]\3L$?>*O-ZL-@&#D2-/*I[-^'(\5R>),"$G\<GYUV"C!-<9Q"@HX
MBP%"W"LAQ,J(U/:KL0@MK6%+4O,J=>E)[:RZC*LC/$>*[R&F?D:7$)'T:V.]
M]K3^T*5@9XCQ>-(;9'P-!Q"RI3%LYS%!*7T2B-%:U/1[B3!3*L85.^(N#;P%
M'CA)P6Z\4Q4&$HSG$H<4D#$G) ZU/CIC!GSWD#>.M)T?V::R>9I,:=/*O.6&
M7'OW3W%AM2D(N968T RQK7HCXS+6@**9TD>5<CPNVIOBC'PI9<4A8&=6YWJW
MM<;J5U*&DM9DI*H*BK4G2:S<),WV*G_F`-_S16@R@H01S"LR3)%9V"]JXQ8F
M!%Y'^$4]I/9L6)^D,'3K!O$S[E5-=2<;L!O#;NG]VJN)MD8]@[A=64E^.7T!
M@ZU:?)^GK,0-&7OFBI[%M^X1:6[C[JBEMM)4HQL*YCA9DO7F/K=;6$/7`<3F
M24DI))!K9Q]&?!+I06I.5!.G7PH+9KG7%VV%EO\`@UL`I($C11J^VIXE4..U
M$<)NIG=UL;_G"M^S$6-N#ORQ7/\`'ACAD#ON&]?;71LB+9I)_HP-/*D[/ZQS
M%\2K$K_H58A9IF9Z376.'*ZO;0FN.6QR'W&RZXY^%[<9EF2>S,>RNK6D,A\Y
MBJ2I0DU(M[<SP2,S>-E4`*OE23UU-:=K;LL\1.I9;R)%HDD9B?M>-9O!* [A
MN)JDC/>KU!K0PYCT7';MOFN.2P@_6&2!/3PI.ER[K9WIH\:>8ISN:,!&^IKB
MN)6;Y?$J7\-?`NV+9!0Q,*<!4J8[X$UVL!0U!)KC>)L`Q?$<=3>X>B EI* M
M+N4R"9^='3#M3-M;V]SB+ULE+3SN%$W#"?YITN)D5HJ3''EVF1D;P@D#I(2*
MPE<&\0EU:R>VX(6OGZJ&^IZZTYX/XB+Q=+GUI&7/Z1J1W3W5/#K_`,[[;=HP
MJ[Q;![ZT07;.WM%)6ZG8+"1H1[Z=-PA PT0A;RK)]++2XAQ:E3EU[Z@PW <;
MPVQY+-HV+D$_7"[T().A3'WUEJX,QY;H65HE*B4_7>K/=W4W$FK[;.%%\X]A
MK%S;6UJMENX6JV:2$E!4D"3&AFNQGM'7I7(<.\-XEAN,F]OW$N#E%L'F9SN.
MOLKKH@;R8^ZD9R[(GQB:1Z:ZTV;R[Z$GUO#]M5EYUQTK\,Y?R6T1_=%<DYJ-
```

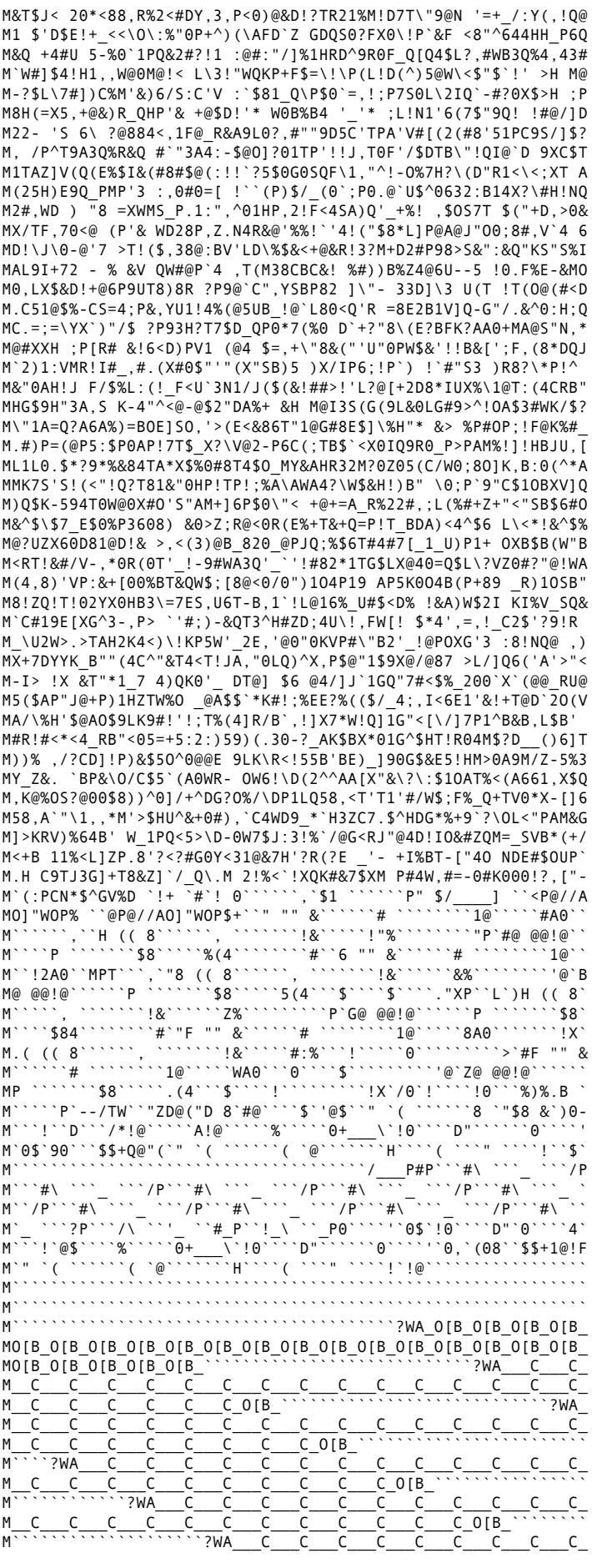
```
MJZGC4E6/N)G9M'Z@KE71&QK5=\>@G['C6DRL6]NXE0A2DF/=6=NI`\JMWY*0
M@;:5RR[=YTH((S"M"X ]%;)K/&XK0>ULD=\"HMZ5E#042-!0JV%$V)WKO'%Z
M;P.K_9]8Z!_[C73@Z"N2X$5.$W"08 =!CV5UB=5'68WJ?)V\^7:AB=NE^[P\
M.9LI>U ,="*T&FD,MA"00D;56Q)I+HM1F*27T J&A$F*MM-!EL("B0.I.M8B
M7HY[J;IK1D4.76*,!Z TRM4D3'>11Y9%,1V#&AB@B:2&VPD$D#O,T4GXTS39
M0D@J*C.YHXHM#UI'2B*8&E*-=:J(R=N^L^_@8IAROSECX5J1[JR,9>;M';*X
M=4$H;6HDGRJ6D[:HVIXTKEF.,[,6+KSVKB%Y`@`2=M0)VJG;<<I%RXJX85R/
ML!M,GVZTMC4^/*^G:[T\:5QYX[MBZ@\AT-CUNSK/OH;SCMCDCT1A?,*AF*T]
M-/'SIN'UY?CL4Z^5`RA2<Q4O-)T\*X]SCI"67.6R2L 9`1I/6:DL..6"RKTU
MM25SH$)D5=POQYZZ=CUI]JXP<=,YDRRH`J,]G8=*-/'=L;=N6W.:I<+&71(I
MRC/UY?CL#WTIKA'^/7!<J#-NDM!4!1WCOK51QKAO+25J7GC49>L4W"_'E/3?
MOQFPZX!_HS66\?X)@BHV>3KU]4UA8CQPA=CDMV2I:T=J1L>ZMNX2I.&8+!_G
MD:^PT\4X7&;K>$4O"EEU-.$^=:<PSKK69Q#!P9R50,[?ZXK5*=_/6LGB-:6\
M&<SJB5M@#O[0J7HG:W=MW:U(]'<0D9=<P-66@H- +,JC4U7NU7* CT=M*]-<
MU6&PHMC,(5UJ@YIC3]-:6D40.](C2B %,101]OGH*2,H]8'SK/PN/2\3\;C[
MJT3GYR !V#N:H8:VI-SB14E0!N)22-Q%*OH/$!C +T#4Y! ]HK00,K38ZY!\
MJH8\@N8%=I0DJ44:)'4UD_OTL&\-0XLJ](&4*:ZCH:GM9C;/"MQ&9XNP))@D
MK3^M78*/;)&TUQ=VIW&L>P_%+5&>TMKA+.;<GJ3II&M=H1)\)ICW5RGB1D8>
M0>(\:\$LC7RI\>,VK [[AO\`6%9WTU8X7Q'BJ+MPH+@9C;6$FFO<>P_$7K.U
MM'BMU5PDP-=!K4]&KO;6PNW>M47R7AE+EXXXD _9)TJ/'E$86L3H5H'QK3<T
M63KO6+Q0Z&<`>>B2TI*X[X-6])-VMQPGG$'OKD^&P%<2<1G[0=@>\U8:XUPE
MYIMQUTH<5JI&DCXU4X1>;NL2QZX8DH<<"DD]=33W&N-DNXZ9A*PU#B@52=1W
M?MK/P0`*Q0Z_QY4SY"M)G.6AS `OPKEK/B/#L,N,5MKI2TN^G+4(3H1 I>TD
MWO38OQ^%<+Z!+Q/P-2J!/$5J(T3:O'XHK)M\:LL9QVS1:%:BT%*5F$?ZWHL>
MQAC!,59?<02I=H\E$">U*#]U%XW>FIC@_ ]T.] 'QJ&T;6NYO@VH)4E%ND$C
MN2:Q'^+L/Q&R1:)YHN7^6DIRZ!683K17_$EO@>*W["T*6XM;1 `D0$T]M3'+
M6M)^/=>'V1^5=('P-=,GLMH'<D?*O..(>*+7&<,0PE"DK:N\Z=/60 8]NM;-
MSQ_AR4(-LV^5A200I&D=:1;AEJ329P3?HD^OC+6W@@UTUT0&'U=R%&?97#8E
MBQ9P>WQBT1(7B?,0'1N E0UU^51'CUU[#;IMZV;3<N#*V4 Y8.\R:D\19A;=
MM;@4%?#MUE4I*EW*X4/(5K8<VMO%;X.NEUP!(S$08K+X)2L<++Y64.*>402)
M&PWJS:-8PN]OBV_9H6' E4H)!TT(HF7=;YIY%9G(QWK=V,^#1_;3IM\;)[5]
M9"-OJC^VFV?_`%I#04RONK/+&,Q_'[37N9/[:?T;%S .(V^O<Q3:Z_U>Z0=C
M3R!5`6^** /TFW/@Q1>BXE(_"<>3*?V4VNQ]7="KI2,`&*I>BX@?_P"5<'B&
M4?>*1LKZ!^&'H_Z+?_C0TO1H9B*8``@=:I^AWT!1QJZ]C37_`(TXL+R!^&;W
MI_-M?^%%6]QTJ-9W,B*KC#KDR/IO$ (U`2S_`.%1_1UQ"?POB.H_JN[]"AIY
M_P`8&>([GPRI]R0*YIP3-;W$:"C';UM;KCRD.%.=R)5'? `K#5(K5=\>@H_'
M(%6L1/;2/"H&DS<I'A4N($\X"-@*Y9=N^*D#.M753Z"D]W[:HBM"?P?O$"I%
MJN?4%$@`T!]042#W:&NT<7><$EQVPNV4/%HF#F&IW%=#A#BK5O$4K4X\MIP'
M:5*TG;X5SW[G\*5=CH&Y^*:ZZTL_1[F]>SR;A25;;0F-_94SWMRR[8EICSF*
M6WHW*=;?9NDCF%&B?K#OW'I72LH=904.N\Q68]J(K-O;5NSPQP6J$I6IY*R8
M]91<!D^\FM!@.Y3SUI4O,=A%9C&6M>$Q43U@4IZTU([:T8(KTI$F#%-32J=.
MG2AH+96 >803)B.ZG)&YJ-HN$J+@C73RHR)H@@J0(IR3K0Q BE!F@68]-ZJX
MC9)O[8LJ2G4^L>GLJR=]*%2U)C*@JD^ZA'(L\'%NQNVY0I]Q0Y2S(RIF:!O@
M8I0,UQF4&S,)(!57:#:*6U3C&OMS<);<"7*GQZ0^A+9W*034QX%(<7%SV,X"
M3EV'6NW I;Z4XP^W)RG[R[9BR?"%<U]8`0H@]GOK// CPN2.<DMA)UC52J[J
M`=-Z%+A4XH92`.IZU>,)\N<]N*_>$3;9O2P7@-@D[U.SP VE;:G+L$)4"I(3
M$B=J[*GWTFG&)]N?ZXZYX#9?N5N,W(:1.B"GI56XX!6EA2V[H*4"`$A.^M=V
M=.M*=-Z<(GVY?KC;[@1#@YEN^&TA,!!$ZU<XC+UGPG:@+*765CM#O KI5$)!
M/=61CJ$75C9-NIEIR[2E25=0:NM='.VS;E&^/;YM,>CMGQS?Y5(GC[$"%+%F
ME21&8YM!\*ZH\-X-,^@->ZG7@.'^BKMF[9MMM:@5P-P.E-9?K5S^/\<"_P`7
MXH^TZA+@;*G"H* !@=VHH&3C&+WULT^'70%A8*FX2 #.X%=]^]G!X$6#>V\5
MJ-,M-%'+:0@I$#*(TIQM[/MQD_YB*ZNU,90FW==)'V!M4[;A6V"4J23T-07-
MVFW(S9CF_)!/RJ9"BM 4)@^%:<-I)VI9AW;4,TC-$V*139J$4I@55,7<KJ49
M20H3/=1E51%8#B4'<@FB)VJ(-*PA85UKSR^X'N\SUPBZ;6IQTG*!J),UZ (F
MFDS%+-M8YW'IF\.X4Y@V%+LW74N'FE84!&XK3G>D-$T&U$Y;NZY7'N%OIG$5
MW#+H97 "U+$A4#2*'!>##AN((N7[A#I1JC((@UU*'4K6M(]9&^E%)FFHOV9:
MT-2@29JGB-DUB=@[:.R$K&XZ&K1WIAO5OE-V/+WN#<6:N%-H0'$),<Q.Q\=J
MZGA'#GL'=Q.V=5G.5I0($ R)()E=*2>A]E(@-I6N-8U(&IBIK3>7R9935,R\
MI;844E!.D$5PN+<&WEUB=[<MO-D.*+R9!UD[3WUW"%A:$J$@*$P:,J4-J6)C
MG<;X<?PEPU=X9?*O+LI0H)*,FIF=9J]Q/PXYC9:>:?2A3"% (4GUIC]E=$)
MI]8IKPO.\N3@;3@F[M;U%P7D*#2VUI3E/:$@D>RK?$'"%UB6/BZ0ZGD/`9]#
M*(%=EU$U&ZZ4.-C*2%&)`VJ::^S+>W%8?P*HMWC-ZI*5S##R9( ![O$4F_W/
MBI;@<O8`5V2&]Q[Z[I('E2%-0^W-S;_""'L!M<+5=D)8>+H6$;S/[:H)_<^8
M"M;U1'Z'^==H=!O3#7?:FH3Y,I[5+>S1A>&!BR:!* -)(S'J:K8.M:WL16X@
M(6;D@@&=@*T+EQ3316AHNJ'V$F":S<#4M3>(+6@I4N\5(5N-!I1/6VN#-+-(
MH1I.NM-("2=H$T1(%:4TGI65])72G XU8K<LCJ+A+@U3U.7>KZKAE"4%3J4A
M>J<Q@FC6JEG>E,^%#F3S2W(Y@3FRSK'?%1&^M4)0M=RRE*P2DJ<`!$QI[:"Q
MF[0TUI2=XJM<W*F'[9(3G2^EPYB8`"4@S/=K42,2MDLL^E75NTXM(4!S1!F(
MCOHUJKZ3*(RTY)(D:1K4+]RQ:M!RX>0VWT4I4"G8N&KEGFL.H=;,Y5(5(-0B
M4JWBA![:.[,!2S '72A1ZZ0?RA\ZL5Y3Q$K/CU^K;Z]?SK&<V%:N,JYF+7BO
MRGE'XUDKWBK>W?&>#VXF\$T6('^$GV4K.3=]^^E#?*S72OE7*]UZ,5616@WK
M8*\JSA6@QK9.CN%00#\71-C4:T(`*#WT3?9%=8Y>W;_N?J(O+I'>R9]XKNTR
M2>ZO/^ E`8P[MJPL17?I&T=]7-PS_DK8JHC#7BD9B(4!XY@:F86_R%*>0D+^
MR =#4.*Z8;<GH$$Z;U/:K<=MT%QLHE"2),R"*Y^ZSZ3$D)F.T!J/&@2I9:25
MI"5QJ!WU),J\*:C(&E*6WF<2$JC4`S3(4I4E0RP3I.XHSJ:0H@&U*6I<I@`P
M#WTP6I3BAE(2!H9WITKSJ6 D]D]:*(HE`')>*,I@#UJ2ED.(2 ==?+:CC6E&
MU4"M>524P25'ITI+7RTC0DDP`*(T*EI;$JVHA..);;*C1%0#9408`FEU[Q3^
M=4,A>9L*(CJ9IVU\P!0&^U("GH@&W$N*7'V3!\Z0<"G2@"8WHAH3`W-,%IYI
M0#VHDU0P=3S@W]K+/QHEJ#:DA6A5M%$`,TQK&]+<@GI1*9Q00F5&-8%,5!#9
```

```
M6HZ"B,$"0-Z<P1!@CQH@0I) 5.F]9N+J2[;6*TG0WB/OK3W'A69C4&SLRB,H
MNV]O.EZ)VTD.(=DI,B:9+B5.*0#VD[BB``V$>RF `42 `3N0*J$5I2X$$PHB
M8I*<2A29/K;4BD%6;KWQ3@`J!@:;35-HKA]IB.8H#321-&'$\G.#V(WBHWN3
M`+J4$_G":,)2IJ `4$;1I1/ TJ"D!8/9B9ID+#@!2J13```#I$13@)2(&@\*
M(9*PO-E.Q@TP6"LIGM 4@E*)R@"3)@=:64!94!VB-35T$I:0M*2>T9@4EK"2
MG,8S&!XTQRYTDZF-.^G4$F)$QJ*ALRUI;25+, 4Y5H3.F\TBE+@(4D$=0=J8
MQ$';NIHV=*PMO,/5(D4"'4NHE!!'RHT`); ``&T"@0A*!"0`#W5=!@M*E*"3
MJ#VHI!Q)<R3VHF*22C,<L3/:@:TX`S9H$Q$U#9EK2'$IGM$:"F4ZAN"I49M!
MYT2@"H$@2-C30#ZP!C:130%;@;!4HP!O1..)2R5D]D)DFA(2K?4=011+4$MF
M8R@478&U!;25I,I(D4DK2Z)201,:4DD91EB"-([J<@#U0![(HID+2X%!)U28
M/G%.'4J=+85VDB2*0$!4:$T\#0Q4`<]'/2R3VR"0*=;J&W6VU'M+]6GRC,#&
MHVH%NHYJ$*(SJG*#UBBB<>0RD*68!,4[C@90I2MAKI1 #*2:;?I(H;.XX$-E
M1U@$Z4+3@<;2XD'*1(HC[*9)@Q14+UXVU;<\H64S! 29JG@*P[:W3HU#EVZK
MKIK5ZYN6K1(6\K*DF)BJ6!D*PU2TF0MY:@? FC7IIQ- \<K+BMH0HZ>1IQO1
M=/VT1G82I+'#MDZL@)Y0*O G_.HEMM7=UB1>0EQ%NVDM%0!RDI.H^%6!A-J+
MCT@!P*DG(%G)K^;1W%@P_<-NK;!6WZI!CK4:W%+"EJ<QMEYQ4J&$LRH]5&2:
MS>&[=BXNL+9N&FW6_HU:\K@S"2\3U\*V[Y.'.)#=X6@I`T"E00*RC9X4O%$O
M.KM3:-VH9;03JA6<JD>$&IIN4K);BL,LRZI1*+/$%PKI"@!\*;!F&7DJ+S:%
M\G"K=0SI!@ELG[JU3B.$+&9=S;J 0I$;]DQ(]L"K3%O;@E332 E3:4:)$%(!
M`'E%)%Y5G8-E==PD73F9M6'H60Z005%9)W[A4^ LH:PAE*4A`*E'*D;2M5'?
MVKCEJRS:6UBXEO9%RWF2D0-HVVJS9VK=E9LVK,\MI(0B>X5"U(1*=S0+5$J!
MV$^X31D:G45#<"+=Y4[-+(/]DUJ(\FOU%5V\KO63\:SE"5 >-7[HYGW#KZW6
MJ*CVQYTKT8CL=;HD>-072AZ0KSWJQAPS/$CNJJ_JZKSKG>W?%#,"M"U,VS@\
M*SZOV6K;@_-J>C:)L=DP*='=29!.:G0(-=L7.NHX*648VD#24*$FO2DP)T\J
M\PX1,8];"?64!\17IZ=-(IGZ</D[08B)PNZ)F RO7^R:6'7'I-HU]6M 2RB"
MH1FTZ5)=B;!\="VKY5#A=RAVSMTH"NRTD:C0^VN>_-8]+9WI;S3C:E1D`![]
M**/=3Q3$40"5I+BD"9$$Z4^Y-+,GFE,]H:_.GBB&FGVI@*<[50C0E24I*ED`
M#J:*F(&4YHCQHA R-*<:[TAOIYTHHAQ2BEL--J?H*H8:4P"0Z8C,13T(2E+I
M5';(BJ#-.30GNI]J(4TC2W\Z55#'NWFLW&4I386R4@0+ILB/.M.JMQ8(?MVV
M$G*E#@7OW&:7HGBK1,JVI33;&E)FJA#0TXW%,=#2&AHE5[JV8?CFI"HVU(J5
MM*4-A*0`!W5#=VJ+@CF$P.XQ4C2$MM)0G8"*0])#2UZ130:55#G6FIC2W%5
ME""X%_: THSL)J(M@NI7.P(CW5(HZ"H$#VA3$TAH:8FJ"![)UH>E(>K3$Z4#
M(;0VI:T#M*,JUHAJ=JC;0E!60?6,FC!UH;.3K2!F:8F%:4P)J*4Q%)T!31"@
M,I&M-W4SR$NLJ;7ZJ@0=8H&0E*$I2D )`THU&2)J-"0E"$C9(@41[YHISM2!
M@"FCLTHT%30=._G0+R%Y.8#.-4SO1#>A6A"KA*R.VD&)Z448/NI#:GS=DTP-
M0.KI228-)1VUI@==J*%U]EHIYKB$`G3,8!JI@PC"VR(RJ*E"/$U9=+/9#Q1&
MXSD56PD1A%H)TY8(HU.E\;4Q,BD/C3B!0(>=, =:<P:70]=**Y7&+CT)G%[]
M##+C[=TVR.:F0!EJC9X=9XZUAN(WENV'W0^5!J4I*6YC3S%7,01;8A9XSAR\
M0MK9XXF7#SE@2E*0-JS;/%;/"56>'*=#P9:=9+[9E$N$G-,["=:S9^O1C/\`
MGQVS+C'EXJPY;7]HRX%#ZI3:,JD+V"O'3I7IS2>4VVG8I2 17FGT38V#K ^D
M&;YYU]"6_1SZAS#4]\S%>G+2$K,3`-#Y-:FA3 'PIRK*3KY4.77>E$0=YJN1
M$QL9\15:]6!AUX21"6%_*K)[_A6?B:LN%7O_`$E#XTG:QY;<`9E&*I*U5Y5>
MN(D^.]45Z$T]O1C!6"^6YM.;2H;EM3+Q2J)WTJ>T01#D2E)UB@OW0Z_F2#!
MKG[KM-J8)J_8'UQX5GCPJ[8'ZPCPH&:/;6.DT:1J=:!O1]P3]HT0&IKI.F/;
M>X76$8_9J)@<U/3\X5ZFF8KR7 U9,8M3_6)^8KUL@I601L3-7+IQ^7LRTYVE
MI.D@U5PMYI5BPV%@K0C*0!W$U> S$>-9^'/,,VA2HI"D.*2=-=ZY>W/TO@R)
M\:1T\Z@M[M+Z5J5E3E<*`)W ZT;+Z'B[VD@(6$C7<1,U4U4@))I'>H&KGFOO
M-Z#)E@SO-.E\*NG&=)2D*F:)Y'V$N= HB?&*+4FH%.H],0V4C,I!.;[J,N 7
M#;7VES[-)HE'K2\ZC?>Y):!$\Q833O/)90E2AH5!(\S0U1TRDA8(5MUUIGW0
MPTI:P0$T+I'(*B2$D23X564@$;;4\T*%)+25)]6 10L/)?:2XB"E1TH)*7A0
M-.H="BA0(!BDAU#CBT ZH,&J@Z;ECG9YDQ%-G'-+8,JB:%12+E$K(44Z#PH)
M#O3G:A6M*"G,8S&!XTEK2VD%1@$P*K)QI3C2A4I*6RM6@ FD% B1M5!':A:1
MD2$R5'J33!84`I)TIF/4/;SZF31!^=(4`6E2E)!DIWI\XSE,ZU4$=Z8>M0E:
M4K"2=3L*<J"2)Z[432&Z84_E"7E-@:]D4;:2VVE)45$#4GK4=VAQ0!0[RP-S
M$S3M@ML@+5F(&IJB;4^5,3K2"@4@@Z=]`"%Z@R/"J@B:4Z&A!"IRD&*8K!,3
M!'2@8I/-2K.8C4=]2$[:5"00ZGM"(/9]M2*6$Y0="=!1#S*HIB:;.E)E6GC0
MJ6$B>E!(#V: F:<*'+GI0!84`H;50R$%!5*BK,9$]*D!J)O[4KS2=/"C2H9B
MD'4;U 1WUIA3*6D+R$]J)BA+B4D`G4["@(':F>3G:*9(D1(H5N!$9C$F!YTU
MR1R%2OE_G=U%$D94A(G01)IR:$'*E))T`$FG"PL!2=E:BBGG2GG3V5&AQ#C8
M6@RD]:2'4N9LA!RF#X&HHP>UO0*1+P<DYD@BF;=0MQQ"52MN,P[IH)!O-7"%
M!$E/>.^FA9&@H1J:`O(2XEI2H6L&!WQ0NOH94TE:@"XH(3XG7]E30E)Z40,=
M:A?>;MP@N*@+6$CS-$ZZEAI;J]$IB3\**CNF+=Y!](0E64&)Z4.&IR819)(C
MZA'R%1X@PT_;*><S#(VH@@D:14]B"G#K1.IAA&_Z(J-=1.# IYVI@#MWT^0D
M#0Q5T&!DQ2DGRI\JA) I!*MNIIJJYF_X*9Q+$7[MV^6E3RRN`V-)J ?N?V@_
MWYTG;U!76IDF-/>*<P!.8;]XK-PVZ3Y,^MN6MN![*VNFGQ<NJ4TXEP#*`"09
M`^%=43F43U- 7&P#VT3U[0H2^R('-0-?RA28Z+E<NTPDG>FG;SW\*A]-M0.U
M<M ]V:HCB=@D:WC.G>JKHD62#)WF*S,<<R8-=:QF3EVW_P!14R\;PP)!5?L`
M=^:LC'<6P^ZPI;=M=-.K*@<J3.D'PI.VI+MPEQJ35%>RI[JO/[$U0=,H5 K/
MMMZ(L6_9M%F:HE9ZZU=0<MB:SR9KF[2@!TJW8JAT35,59LR>>D542`GTI?Z1H
M]E'NFA5I='QIYE9\ZWC?$8UY:&&+#=_;JG9Q/SKU)Q5Q>XE>);?+*+9T(A(D
MJ!&:=?.O*+/2Y:/<L?.O54K38XC?/7*E!NY+2FR!/JH@R/=5SZCG\D3*NWF<
M0L&G2A"'6W,\GJ/5-,A0<?OD-LMO%MMI20F-2I2@=9\!56Z:;OL5PEQQA1;)
M?T(Z%&A/PJW86[5KBURAI(;0MA"C&Q(6?NKCO?;GH.&D7C5VIZV;0IJY+>4`
M:")J9]EEI,IM`XJ?52 ._OH<+!0[B*.^Y"_.4U?(C4=*>MLV^67AK;%W:<U=
MNA*PXI!$"=#4#RFT.O.(MT>C6YAXGUCI/9%6+-Y-K;X@MPRAE]1,>4U562+;
M&4J[/I 2IF=.9+?3OU-*U[J1QI"WXM6$%#:$K=4LQHH:1[C29%K<7Z4(0K(J
MW#R%'?4U+:N):+JG"&\UJP#F.7M"9'GM4: IC#,.N"DIY*$\V1KE"2(CVBA?
MQ(U;6]P\^@!8Y+@`D_F@_?4BL-94`"I9@R)-+"V%LV".:!S%%2B>\$DCX&KL
M5K4<[:IJPYI22DN.D'H54OHY"DE)==@B(S=*N?.D#W;TTSRJEZ!'9#[P3&P5
```

```
M[*K/,(LT-MI>>*E>JVD[UK>/?6;=`IQ>R5TRJ%4EJLT!;VSBE./M9$YBE1D_
M"IRQR&!<>D. .E,Z]3$5/B>7Z.NP(SEI1U\*H.MWGT7;N.725-A3)* G\X>%
M%GD2R&[Q65]Q2XA2NB8JWZ"ZMY+PN5%03E!\*:]^M958,)&9X2M0V3YFM!L9
M`A(,A( K3-K ??"[DIYSJE,*Z),3'^=7;FV<6UF>N>PA06-.ZDM%S9^DOI>1
MR9+BT1)]44V*NI5AJ%=2X@P.Z:DZ7?XC27+RV6DW("".H(T'_P`4UN^[<!33
M=R,J1EV.H@T&*:/O$=;-1$> %.I.6ZP7+H%-KG^YUJ[$EN76K%#J+A/)2@$'
M7:CL[>Z:MT\I]!2HE0)G76JJUE%D]9)3"4NAA,]4Q,_"MMM*6T)0D]E(@35C
M%NF:BTO&W'5I=1+B@3O3)M+Q%PM_F-E2D@$":T2944]U.3 BM,VUF*MKQ=RV
M^5MYD @#SHGK>]>+69;8R*S:==(K0I3!JINLB_3>*2AAUUI/,4,L=2*.X3>^
MBNAQQE*"@@J'0146/VYN7\/1F*9>F4]8!,5#?K<Q3"W&%2V0PMQR#J($14VU
MK<BY:HO?1&DH6V49``HJ1&]5@Y=8<E+"W&Y42=ZT,+_DBSC^A0/@*:Y##16H
MHS.N" #WU6=^=,XNO8<ZXEQYO,\HNB3)@TD.W$N7Z7&LJTQ[J=5E=HN;5]*&
MW%(M@VH*[^^B<>;N'\.R@9"^I*DC:0*DV";],N'6[I*FNRE28Z:D;^ZC?8OG
MEL+*F@6E9A0X=)Q7%&M0E#B A/<"FF7=NIPK$7LPYC2UI0?)45KPEWL]S;W]
MVTIE2VD@D$D$SO-/<,W[[+C2BT H1(-0NWJC?LVZWBP"V% D:+,:Q6L->_S-
M.R[BDAJ^;82T"UE"<LU#:VV(6MJTPAQLA'VB3)UK5^S3#:JSNLUJVOF<^5QJ
M'%%1D'2DW;7Z'W74NM2X$@R#TG]M:)/2G&U#E67Z)>F]%SSF\X;+<:QO-.[:
M7CSC3JGD9FE2F ?C6EUI"HNZRW[*\N^6''T#(XEQ, [BCNK2\N6%LKN$97-#
M`(K0%.K2ANL\6MYR^6;E)$9=CM$4R;2[:;0VBY&5"0D:=U7R)-*=3I\*+RK.
MM\/N;9@--W4)!)U!ZFDWAUPRI:D71',4%*GOVK1)@32)D:3%%W6&M)M+QY2+
MAY;CA',R)G8:4B4+N;9Q-\]S+B6DP(@@3!JSA1(Q/&2)`4^CX(%08B@KQG"6
M[5Q+:U//**HD2$:U-^VIWI(\RAN_90Y>/AWEJ<0H'H-#43(M\0NRRW?/NJ8R
MO @Z`F11--7*.)V4W#Z'@+):AE3$2H"K%HVEOB&_R)"4\AM)`VDU/*[*YPS.
MT<[]PX4=I(S"2?VU7LVQ?.7-J\J];6V$E275B%3KI&];1@U0Q)LH7;7R=5VJ
MM1TR*T5MW"32I+LG<,04QS[A0[BO2H7<)M+:W"EW%\ (2E*7E$>%:>=+B4K2
M04D2"#H0:%YY-NSS%CP`F)/=32[K)M;"W>?7;7"[MNZ2D.*;YY(R$P#OX4UY
M8V[!=6&WW&;<%3RE.D$")E/?I-7FDHMWG,1NEI2ZXA+1C0!,Z#SDTKMQ-XM^
MQ2XV&B"U<%2AJ#H4CN-9XM2W:@IBS<4L6C"G@PVEU_F.$$(4G.([S -66+/#
M;NZ;0U:]A=JW<)*R9[:CI\#59"!;.\1-@99MVFV0?MY6"!'?KI1&;*PP&^=S
MI:LV4H?Z*.9 0D>Q1IX=$]I88>^_>M*L&(MW@@'+N(D_&K*<(PP"/0+8^;0-
M38>RMC#6&7C+R&TI<(ZJC4U8!TTGVTTS;5-.%X>$_P`1MM/ZI/[*-.&V(((L
MK:?^BG]E6M#O3=-.E-0\HA96B=K.W[_Q8_94G(MTS_!VA.T-BB29U]])6M34
M7=1*9: T;0/)(K"XH"4X0E*4#,71!CP56^=JYWBI1] :`@RX?E_G5D:G;@K@
MJUFJ#@.4ZZ5H7!(F:SW#T[S4>B+"SELM>M4#)-7WQ%DD>(K/)-<_3M "K%F0
M+A,[3K5>IK8Q<(/C5G:+3^EY/>*90A5/=:72?$4E#M5K#IGVL6^BTGQ!KV9E
M86TTKJ4)^0KQ=J0M) ZU[!AJN9AUJOO;'PTK>7\7+Y?2\-R=*%*(5.Y[Z=)H
MM)-<G X2$Z@1-(C>D33]*(C4VC*H9=%'6@+#:E)44 J3JDD;5,=M*>-*@KOV
M[5P4\U 7&TU(MM#B"E:04GH:.*<BKI-T``2D) @#04PFC.],1&U5#>=-[*<C
M2F[Z(1&M0W#"7V\ITTB:FUW-,=8H*;6'--L/-DJ474Y5%1DQ4J["K=+!$(3
MECV&14Q)$4C5+:H+PP%UQ:'UH+ADP*OI[*0!.@BE).YIZLFDMM5'[%+SDYRE
M"O72/M4ZK%M;[SI_G `$_DQ5DF*7MII-U4:P]';+ZBZI0RS$0.ZDW8!+Z77%
MYLD\M,1EG>K8(I3KK5TEM5W+8+OD7$@!*?5[SWU8!(-,:<C:JS:::1IS0U8A
MBK72GG433&EUJHK75OSKBV<"HY2BKSTH56C?+O<FB[I!2HSX15E5-.E71M':
M->CV3+$SRT)3/D*IOVET;U5RR^E.@"0H;?ZFK\TTBKHWI5=8?(0MMX!\""2-
M*B.');MVPT0'6UE:5=,QJ],]::::.54FV7+9+KB$Y[E]0SJ Z@:&HSAKO+4S
MS4AEPE3J8]8DS\ZT13DG]M-)NL^YP\W;K:75)+" ,HZB*T">E)-,1%$\GGLT
MTT\2*$C2J")FD#0FD#K4#DR:1-,:;I0V*>\TE':A&])6XUHI3.E(F*:>U2)H
MIY[Z=1D:[4VD#Y4RC04W+!+CY6AQ;6;583]HT8L6#<VKZ00Y;E929W*A!-60
M=Z:3/=4U&N51FW;].3=P>8&RWOTF:=#*$7+KX]9Q("O94A(BG$3X4T;.33+;
M2ZTMM8S(6DI4.\'I33K(VIYT,454L\-M\.04VR"A! $$DZ#:I[JU8OF.3<M\
MQO,%928U'6C)&U$KPJ+N[5FL-LV6U-M,@(4H*())DC8TG,+L77U/KMD%U9E2
MCN:M`Z;:TJFHNZ!=LPZMIQ;:2MKU%'=-&I*7$%"@%)[B*7A3B!4TIYUVBGFA
MF!O3]VU&H*02=)I#N%,3":8$Z=]18+?3K3$Z1.M,5?&D2)[Z+ J.AKF^*P1;
MVQ)D*S&.XP*Z)9$]PKFN*EYA;)U.BOG5C>/;B[D:5GN[ITZFM&YZQ6<Y^,2-
MJR]$3W9BV1'A6?.E7;T]A()]E4CIM7/J.L1Q4C1 =2>XU'1HC,*L1<NS]<V?
M"C,2/*H+E0);/A5@C1)\*WCTS>TK9@@UZS@JPO K,C\DB?::\F0#H9^-=_@F
M.8?;X/;V[MP$NHS2(/?72S>+E\OF>'5)51YAF\ZQT8_AI _AB!/@?V5,,9PX
MD?PUOX_LKCQKC96H#-%^RL\8I9+VNV_C4PQ"SC2Z;/MJ<:FJLID[[40.M5_2
M[:#]>V?)0HTOM*'9<1_>%-5*D(I;^P4P6D@PM/\`>%-,[%/O%-5")!-(TY&F
MXGP(IH@[^&]/*&.LTQ! TVIS(T(H>_SBJ')F/*F'^M*8DGRIITZ^ZJAS\J;<
MTTTQ5K%5!4MJ#.)$&EG'?50=,30E44V>4D@T08.FN]*=:B0H[*-'FBJ@IUIR
M:#,(,T@HZ&C(II&A*H.M-F$5J)13%#,GK39J;-XU4.L^-!/6G4:$F*I3]*'_
M`%-(J%#G%5#SUFD-:$GN-+,*:!1XT]1A0TUHRH:4!)T-(G2A!IB9&E%2`]C6
MA)TI@>S3%7=0/.M..M1R9I@HS%$'OUIITT-"3T!I!6GG0E&#-)6L4 5K2*MJ
M`AH1W4B8H0J:$JDT5)(I*(DBHRL4RE0::$B=S3 R3KK0!0UI!0.U14JCI22:
MC*ITIP:*+K1@P#4(TF9HQZLZT:(P#-2 Z5"3J/&C"M*BI!&E*8]E1YP-R/?0
MBX01ZXU\:*FCXTMA47.;ZK3[Z'TAH;NITZS6=*GFD=.M5S>6X_GD]V]";^US
M1Z0CRIJM+0.F],#KO50XE9_\0GW&@^D[/K<))'<#^RIIJ1>GY4REP)Z505BM
MGK]=_A- <6M"='"?9334E72J=:YCB-95<(3([*:UEXO9@F5J_NU@XM<-W+_,
M;4<H$:Z=!4WIO&7;F[KK6<N2\G7I6C=D$FLTF7QX5+T[P5ZJ5IUZ55\)FIKE
M69?LJ UBND1C>B3H10Z&G&](RF>42$D[15H+`0F.ZJ:P2@=:E2^,@06R8ZS6
M\;I*LI=@;T7.JMSD&.Q'?K1<UDQV%>^M<TTLAX@[[T8?UU-5,[/4*I%3?0JJ
M7)I<%P/]"I _/7VUGA2#)SQ[*,*;VSZ^7^=9V;:*;A4;FC3=K!,*-9V9`.CG
MPI\R-^9\*@U!>.:'F*GSJ3TYW?F*]]9 6DG1Q-%G&W,31/#93B3^L.JVZT:<
M3N!_/*]M8@<`T"T^^BSQ]M/OHFHW!BMQ_2J\ZD&+W(_GE>V*P0X9]<>^GYA/
MVA[ZK.G0)QF[2-'S-&G&[R?QY/NKG0X9T(]]%S5 [CWTVS<9^.C&.WL?CSY1
M1C';TC1[X5S?-7_HT2755IFX?XZ08Y>:0[KY4:<>O2)Y@GRKF@\N1 -/SE=0
M:NV>'^.G&/W1.K@/LHQCEU/KI]U<N+A6FAHS<+ T2:;9N'^.E&.70U*DSY42
M<>N>BD1Y5S N%:2D^ZB#YC8BKNI?C=*,>N!L43Y4?T]=3]C^[7,BXW[)IS<Z
```

```
MG0T9^O\`QTOT_<[DIU\*;Z=N#^1[JYOTDQL:7I/A4\I]<_'3#'GYV1[13C''
MCI"?=7,>D]33^E1.\U=T^O\`QTWTT\>B?=3?3#O<FN<%T9T!IQ=DZFKM+\<_
M'1_2SAZ)IOI5SN'NKG_29G6EZ6*;K/#_`!T'TLL=!3?3#D>JFL 71)H3=>=.
M5.'^.A&+N=$BG.,N]R:YPW4``4WI5-U>$_'2#&G!K ]U-],.#:*YSTG<TO2I
M&E-KPGXZ/Z9=`T"8IOIEZ#HGW5SOI7?3>DQ4W4X?XZ$XT\.B?=0C&7P=,O?M
M7/FY)&@-,+H]QJ[J</\``0_33^8^K[J XQ<1]GW5@&Y.\&D;@G4[^--U?KGX
MW1C%QWI]U.<:NB-2B/*L#TC0R#0JN%&(!INK/C;_`-,W(.BAXZ4QQBYB"L>Z
ML#T@C<&F+ZAKETJ;J_7_`(WE8Q=*V<'NH3C%R=G/A6'SE?DDTQ>4>ACRINK]
M<;)Q:Y@_6F?*@.+W<&'36,7E3M3<XBFZU]<;/TK=3^./?3?2EPH?CC6+S5GP
M\Z0=.@S#WU-KP_QL_2-P=.:?93'$'OZ4Z5D<XCJ)ZZTQ>&^=(_M"ING"M?TY
MT[N$T)O'(GF&LKG1'UB-?SA3%X'^<1[Z;_U9A6IZ4L_:,SWT)NEF>W69SD[<
MU'OIO24:RZGWU&N%:A?)'K'Q%#SCN)TK,])0`?K![*8W34_C-? 5=KQK3+T:
M]:7/&HG2LOTMO\L^44/IC0'KGV"B\:UP\-==J7/$S.E9!O6QU5[J8WS?3-%1
M9C6SSDTY?![ZQ/I!L'U5>^A.(I_(/OJ6+QK;4^E.DU \^.M9!Q'3\7KYU$N_
M*AZOQIIJ32Q<. DF:SPJ72:(W1*IBHD&5D]YI>FI#K5*C0'6B5ZU"*S6_2,>
M-.F9H0*D3I1$J%=F"*D24SMI4(-'.VE9/":6Y&@H@6NX14$T^U14_P!4=TBG
MRL]-J@!FG'6BK&1DT@RR=>OG4,Z4X-0\)>0R1.WMI_1VB=X'G44T\P(IY-)/
M1F_ROC2-LB("JCG2*<J,U-W]-"]%3T7259QLY3 D#?:D%D=:;JV0O15 >O2%
MLO\`+IRLQO2"U=YIRJ:A"W<F0NF]'=!G-IYT^=0ZFGYBB-S5Y4U#<A^9"S[Z
M19N ?7/OI!TG8Z4_-5WZTY4U`\NX&DGWTX%SMG5[Z<.JWFD'#O-.62<8:+D=
M33YKLF0I4^=%S533<]5+ED<807> ^LJ:?F7G52O?2YZJ</JISIPAN==C=2A3
M%^[)W5%'SR=#3<Y6T4YTX8A-Q=]2HTO2;KJ54?.G4C2FYQ)T%.=.$#Z3<Z'M
M4_I-UOVJ<O1T%(O:;"ESJ?7#"[NP9(,TO3+H?9-%SIZ"ESSW"G.GUP)O;F>H
M\*8W=P>AH^:#]D3Y4_.!^R*<Z?7 "^N1T--Z9="!!]U'S1/JBGYH_)%/LJ_5
M$9O;DG4&D;RY$:?"I"Z/R13<U/<*<Z?7$?IEP1L8I>F7/0$'RJ0.#N%+F1T%
M7[*?7$?I=SOK3F]NN\SY40=&\"*7-!&U3G3ZX#TNZD^M[J;TJZC3-4I<$;4N
M8 ?5%.=/KQ1>E76FJJ1NKLG=52!Z?LBES9.@ISR/KB+TB[.ZE$4WI%W/K+%3
M!WPIB[(V%.=.$0EZZ)W5YTN9='[2ZF#G<!-/S9(%.=7ZX@+EU$2KWTIN8]97
MOJ;F&3I-.'#H(J<Z<(K$W!_*]]*'R(E6OC4_,)FG#I\*O/(X17*'YW/OI<M_
MK-3\PDT_,)ZU.=7@K\E[3?7QI%IW;73QJP%GI2*S%7E3C$'H[L4O1G>^I^8K
M:=J06JIRIQB'T5P[JI>B*VGX5-G)ZTV91.]3E3C$?HJORJ<6AWST>8[33J),
M:U>5_5XQ&;0C4*Z4XM -U4>?3>EGDU.61Q@?1$_E4WHZ`(S415!&](GKWTW3
MC BW1U--R&YC<=TT6;<>-,>E-TXP)MVO]&AY#4:BCZ33$B*NZ<8#D-;0*;E(
<`,0*.*&/&G(XQ56DA7A0FK!&:HE(ZUODS8__V4:B
`
end

begin 600 WINMAIL.DAT
M>)\^(BX#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`G````4D4Z(%MW>'-I
M9UT@4F4Z(%)U;FYI;F<@82!Q=6%R="!L;W<N+BX`MPP!!8 #``X```#0!P4`
M!@`5``P`.@`&`$,!`2" `P`.````T <%``8`%0`"`#L`!@`Z`0$)@ $`(0``
M`#,S0D,X1#4U.$0R,T0T,3%!.#4V,# P,$4X.4(S0S Y``<'`0.0!@!(#@``
M(@````L``@`!````"P`C```````#`"8``````L`*0```````P`N```````#
M`#8``````$ `.0"@YG$ETK>_`1X`< `!````)P```%)%.B!;=WAS:6==(%)E
M.B!2=6YN:6YG(&$@<75A<G0@;&]W+BXN```"`7$``0```!8````!O[?2)7%5
MC;PT(XT1U*A6``#HFSP)```>`!X,`0````4```!33510`````!X`'PP!````
M%P```'=M8F5A;'- 8V]M<'5S97)V92YC;VT```,`!A 6.:H@`P``$,<+```>
M``@@`0```&4```!!05)/3CI93U521$530U))4%1)3TY/1E1(15=!5D5&3U)-
M4T]53D133$E+14E425-!5D5265=%3$PM0D5(059%1$E.5$521D%#14A%4D5)
M4T%024-455)%251/3TM&3U)255-3``````(!"1 !````_ H``/@*``#Q$0``
M3%I&=52B(*8#`H`<F-P9S$R-18R`/@+8&X.$# S,YT!]R "I /C`@!C: K
MX'-E=# @!Q,"@P!0H1!V<')Q,A%V?0J V0C((#L);PXP-0* "H$L=6,`4 L#
M8P!!=6QZ;@(@90NF$7 *P (@.M<*H@J$"H!9"&$@`0`$] )I`B @;V8@=&A@
M92!W878!$ 6P;20@<PA@;F0$(&QI&FL:0&D%0 0`(&$@"1J <GD:4&5L;"WL
M8F41`!J 9!N@`C $D()F`-!E+B @2 20:QN1&_)P#>!T"' :0$EA&A!O;VL@
M&J$'\'6;!!$<$&8'T1R 96L;\?1G;QWA5!HQ!/ '0!Y#/0XP,!_P'J $D!D@
M:7:;! `9L2P:X1ND;B<%0(L)< = ;!Q@<VAO`_#[#R :$W,)`"* !" <@B-
MS&)U&\$%0&1O!Y$:\ST;5'D8\AIF&_$>,6)A4PW1)$1Q=2B!+A@E;PAB:F$"
M0'!H7"<[# $8,T8%L0!P'& Q+917:1XQ<R* 8W,C0$\A`!]!`S 6T"!H*H$Z
MR"\O=RW0+FDF(1]0]&XN!:!M%L4=\ !P'3#O`U(:$AXQ)Y$@(: #H":0]'=N
M"0!A'3 E$RQB'Y._*Z(9]2OE`0`BX!W <QWA[D$%0!HB*,!C'X 9\1<0_PK
M)&$S8!Q",U0L0QO2&B)_"7 I<"P1,3$'<"32"K%A]P> '7$SLD8OHB>3&3DL
MD;\;L1KZ,$(HPS!P`W!M&Q!G*/$YPQO23TL:$0A@9_9H'>$8X2 `P!QA`' T
M`?<C< # &X%S'O(P0@D``W'?*G <`0D`!4 9\60J<!P0_FH?\#Y=&B _T3!"
M*((_@O\DT@;@&B _PD"30@,;X1S0-R32$3 ^06(<8!HB5#+\,S@<`"6D1@)
MDRZ10Q/W-'$SPD9A=#@``( `T#Q4_T$`"L %0 /P0W%%AP;@"Q'?1/(BP"3A
M`Y$Q(&0)< 01OBA&$0N &A,>M@&@;QJ _BDC0"]21LXP<QS0/=$KL?]%4!UP
```



```
M__C___C___C___C___C___C___C___C___C___C___C___C___C___C_O[B_
M`````````````````````````````?WA___C___C___C___C___C___C___C_
M__C___C___C___C___C___C___C___C___C___C___C___C___C___C___C_
M__C_O[B_`````````````````````````````?WA___C___C___C___C___C_
M`````````````__C___C_`````````````````````__C___C___C___C___C_
M__C___C___C_O[B_`````````````````````````?WA___C___C___C_
M__C_,# PP,# P,# P,# `````__C_8&!@P,# P,# D)"00$! ````__C___C_
M__C___C___C___C___C_O[B_`````````````````````````?WA___C_
M__C___C_````D)"0P,# P,# P,# D)"08&!@P,# P,# P,# P,# 4%!08&!@
M````__C___C___C___C___C___C_O[B_`````````````````````````````
M?WA___C___C___C_````P,# P,# P,# P,# P,# P,# P,# P,# P,# P,#
M8&!@@(" (" @__C___C___C___C___C___C_O[B_`````````````````````
M````````?WA___C___C___C_````P,# 8&!@8&!@P,# P,# P,# D)"08&!@
MD)"0P,# 8&!@@(" 0$! __C___C___C___C___C___C_O[B_````````````
M`````````````````?WA___C___C___C_````8&!@O[B_GYB?(" @D)"0P,#
M7UA?O[B_0$! 4%!08&!@0$! 0$! __C___C___C___C___C___C_O[B_````
M`````````````````````````?WA___C___C___C_````8&!@__C_O[B_0$!
M8&!@P,# ?WA___C_0$! 0$! 8&!@0$! (" @`#@_`#@___C___C___C___C_
MO[B_`````````````````````````````?WA___C___C___C_````P,# (" @
M0$! @(" 8&!@P,# 8&!@0$! 8&!@0$! 8&!@0+B_`/C_`/C_?WA___C___C_
M__C___C_O[B_`````````````````````````````?WA___C___C___C_````
MP,# D)"08&!@8&!@P,# P,# P,# 8&!@8&!@D)"08&!@0$! (" @`#@_`#@_
M__C___C___C___C_O[B_`````````````````````````````?WA___C___C_
M__C_````,# P8&!@8&!@8&!@8&!@8&!@8&!@8&!@8&!@8&!@8&!@0$!
M__C___C___C___C___C___C_O[B_`````````````````````````````?WA_
M__C___C___C___C_````;VAO/S@_?S@_?S@_?WA_?WA_?WA_?S@_?S@_/S@_
MD)"0(" @__C___C___C___C___C___C_O[B_`````````````````````````
M````?WA___C___C___C___C___C_````/S@__[B__[B___C___C___C__[B_
M_[B_/S@_````__C___C___C___C___C___C___C___C_O[B_````````````````
M````````````?WA___C___C___C___C___C___C_````O[B__S@__[B___C_
M_[B__S@_O[B_````__C___C___C___C___C___C___C___C___C_O[B_````````
M`````````````````````?WA___C___C___C___C___C___C___C___C_/S@__[B_
M__C__P``__C__[B_/S@___C___C___C___C___C___C___C___C___C___C_O[B_
M`````````````````````````````?WA___C___C___C___C___C___C___C_
M__C_````?WA_?WA_?WA_````__C___C___C___C___C___C___C___C___C_
M__C_O[B_`````````````````````````?WA___C___C___C___C___C___C_
M__C___C___C___C___C___C___C___C___C___C___C___C___C___C___C_
M__C___C___C_O[B_`````````````````````````````?WA___C___C___C_
M__C___C___C___C___C___C___C___C___C___C___C___C___C___C___C_
M__C___C___C___C___C_O[B_`````````````````````````````````?WA___C_
M__C___C___C___C___C___C___C___C___C___C___C___C___C___C___C_
M__C___C___C_?WA_`````````````````````````````````````````````
M?WA___C___C___C___C___C___C___C___C___C___C___C___C___C___C_
M__C___C___C___C_?WA___C___C_O[B_?WA_`````````````````````````
M````````?WA___C___C___C___C___C___C___C___C___C___C___C___C_
M__C___C___C___C___C___C_?WA___C_O[B_?WA_`````````````````````
M`````````````````?WA___C___C___C___C___C___C___C___C___C___C_
M__C___C___C___C___C___C___C___C_?WA_O[B_?WA_`````````````````
M`````````````````````?WA___C___C___C___C___C___C___C___C_
M__C___C___C___C___C___C___C___C___C___C_?WA_?WA_`````````````
M`````````````````````````````?WA___C___C___C___C___C___C_
M__C___C___C___C___C___C___C___C___C___C___C___C_?WA_````````
M`````````````````````````````````````````````?WA_?WA_?WA_?WA_?WA_
M?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_?WA_
M`````````````````````````````! ````<!`0`%````"0(!````!0``
M``$"`0````,``````%DS`A. `P`.````T <%``8`%0`$``P`!@`-`0(0@ $`
M#0```$U60RTP,#%3+DI01P`&`P(!D 8`#0```$U60RTP,#%3+DI01P`&`P(%
MD 8`N ````X````#`" .!Z8``!X``3 !````#0```$U60RTP,#%3+DI01P``
M``! ``@P`-YDZ]"WOP$"`0(W`0`````````>``,W`0````4````N2E!'`````
M``,`!3<!`````'@`'-P$````-````359#+3 P,5,N2E!'`````,`"S<>`0``
M`P#Z?P````! `/M_`$#=HU=%LPQ `/Q_`$#=HU=%LPP#`/U_``````L`_G\``
-`````P`A#H4M`0`,'D#=
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

25. [wxsig] Re: Running a quart low...

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 7 May 2000 00:26:10 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82151-2000.05.06-23.27.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6 May 2000, at 21:12, William Beals wrote:

> Aaron:
>
> Your description of the waveform sounds like it is a very well-behaved
> interface. Here is a picture I took for Russ a few weeks ago. The scale
> is 250us per division, so it isn't really showing the slopes well, but it
> does sound like your waveforms are basically square.
>

I can see the whole data stream, and it looks much like your
example. There is no wind here tonight, and the T238 is racking up
the errors consistantly. Every fifth pulse of the LED is longer than
the rest, and it coincides with the sample counter (i.e. as the
sample counter increments, the led is longer, and the error count
increments). So right at the moment things are consistent. I have
looked at the data stream on a few of the "long" pulses, and they
look normal as well. (If there is more than one device being polled
during that flash, I can only look at the first one due to triggering
constraints)

> For any 1-Wire specs, go to http://www.ibutton.com and from there you can
> download the specs for any of the 1-Wire devices. At the back of nearly
> every device spec is the required timing parameters. From your
> descriptions, it sounds like you basic communications is OK though. You
> may want to make sure you look at a lot of data just to make sure that you
> are looking both at data that is being sent by the T238 as well as data
> coming back. All transactions start with the T238 board sending an address
> (as in the picture above), and data coming back can be many bytes later.
>
> The 9913 cable _should_ be fine. You may want to try a test where you have
> the weather station on your bench away from the 9913 cable (or unplug
> whatever drives that cable) to make really sure.

I have the unit unconnected to anything but power and the wx
station, the radio and it's power supply (an astron) is off, and it is
still occurring. One remote possiblity that I have dismissed is that
I have a harmonic and it's getting interference from the pager
transmitter about a mile and a half away. I don't think that is it
because 1) the wave form on the scope looks ok, 2) the errors are
only with wind direction and not the others, and 3) it's a stretch
anyway.

>
> I may be trying something similar to you soon. I didn't have a good place
> to put my weather station on the roof as I had nothing to attach a pole to.
> Since they installed the satellite internet dish on the roof, I now have a
> vertical pole I can attach my weather station too. Trouble is that I will
> be running cables behind a dish that is having one watt of 14GHz plus being
> broadcast at it. At those frequencies, one watt is a lot. The installer
> said he accidentally got in front of a dish when it transmitted. He got an
> instant headache and spots in his vision for about twenty minutes. Scary
> stuff!
>

Ouch is right! But the results sound like a lot of fun!

> will
>

Random Quote:

My car isn't broken down, it's mechanically challenged!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

26. [wxsig] Wx Station at Colo Springs Hamfest

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 07 May 2000 12:16:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: dan.awtrey@dalsemi.com, Lloyd Plush <lgplush@csi.com>,
        Norm Miller <nmillerN0ENN@worldnet.att.net>,
        Phil Pearsall <pearsall@msn.com>
Message-ID: <LYR15067-82300-2000.05.07-13.19.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The Pike's Peak Hamfest yesterday near Colorado Springs went real well. I exhibited the 1-Wire wx Station and our T238 interface and display board. I had a working wx station that measured and displayed data from inside the building. I also had:

a working 1-Wire rain gauge that had the cover off so that people could see how it worked;

a TNC and radio to send APRS WX packets to another APRS display about 10 feet away;

a second weather unit that was apart so that people could touch and see the insides;

a second homemade radiation shield that people could pick up and examine closely;

a poster with pictures and circuit diagrams of the wx station, rain gauge and T238;

a stack of reprints of the Circuit Cellar article;

a print out of a findU wx display.

There was lots of interest and I think that I could have sold a dozen or so units on the spot if I had had them available. I was at the table from about 0745 to 1030 and almost always there were people to talk to. At 1030 I went to the APRS forum and another guy (who didn't know anything about the wx station) manned the display. I returned about 1115 and talked to some more people until I started to dismantle about 1140 to go to the APRS luncheon. There were still people looking closely at it when I dismantled. All in all, very successful.

Some observations:

1. Having the working TNC and radio didn't add much as there was enough interest in the wx unit alone.

2. Several people came up and said that they had a 1-Wire wx station, but they were just using it on a computer They all said that they will be very interested in purchasing the T238 interface board.

3. A few people came up and said that they had a 1-Wire wx station that they bought and had never hooked up. They indicated that the T238 was just what they needed.

4. The show was held in a large high school gymnasium with ventilation fans that would come on and off as needed. When the fans were on, there was enough air flow at my location to turn the anemometer and wind vane. This was uniformly taken to be a high quality indicator of the wx station.

5. The ball bearings for the two shafts were also taken to be a high quality indicator, especially when people could spin the shaft in the unit that was just laying on the table.

6. Many people had no idea of how a tipping bucket rain gauge works and it helped to have the top off so that they could manually tip the bucket and see how things work.

7. For many people, the idea that you could have a home weather station and view the data on the internet was just mind-boggling (and it still is to me :)

8. I wish that I had more printouts of the wx.findU.com page. I only had one and couldn't give it away.

9. The poster was good because people would examine it closely while I was talking to someone else. However, I wish that I'd had some more explanation on the poster. It was just a collection of pictures and schematics taped to a big piece of cardboard.

10. A Middle School teacher said that this was just what she needed in her class room. She especially liked the educational aspect of being able to relate the wind measurement to counting and seeing mechanically how it works.

11. I had the set-up so that the 1-Wire (colored red) that connected

the T238 to all the weather sensors was clearly visible. It would have
helped if somewhere I had the words "micro LAN" to give an idea of the
concept. After I explained it, several people said "this 1-Wire stuff
is pretty neat."

12. There was a lot of interest in the homemade radiation shield.
People could easily understand what it was for and how it worked. I
plan to finish my write-up of how to build one and we'll have it posted
to the web page (with pictures) soon.

I'll have a picture of the set-up at the hamfest and will send it to you
all. I enjoyed this whole thing and I think that we have a winner!.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

27. [wxsig] Re: Wx Station at Colo Springs Hamfest

From: Steve Dimse <sdimse@netrox.net>
Date: Sun, 7 May 2000 14:26:05 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82301-2000.05.07-13.27.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 5/7/00 2:16 PM Russ Chadwick (kb0tvj@boulderneWs.infi.net) wrote:

>8. I wish that I had more printouts of the wx.findU.com page. I only
>had one and couldn't give it away.
>
I've learned this one the hard way, I always come with 500 or more
handouts of my latest project when I hit any hamfest. At Dayton (a 1000
copy 'fest!) it will of course be the findu site that is featured. I put
on just enough info to make people really want to read more, and I
feature the URLs prominently on the page. I always get a big spike is
visits to my web site (and unfortunately a spike in emails to reply to
;-) after each hamfest.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

28. [wxsig] RE: Wx Station at Colo Springs Hamfest

From: "Steven R. Bible" <steveb@dandin.com>
Date: Sun, 7 May 2000 14:42:25 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82312-2000.05.07-13.44.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> 10. A Middle School teacher said that this was just what she needed in
> her class room. She especially liked the educational aspect of being
> able to relate the wind measurement to counting and seeing mechanically
> how it works.
>
> 12. There was a lot of interest in the homemade radiation shield.
> People could easily understand what it was for and how it worked. I
> plan to finish my write-up of how to build one and we'll have it posted
> to the web page (with pictures) soon.

The two above are by no means the only examples, but do remember the DCC in
September. When you write your paper to include the technical details that
people what to learn how the unit works. Plus the proceedings can be sort
of a users manual (in addition to those on the web).

> I'll have a picture of the set-up at the hamfest and will send it to you
> all. I enjoyed this whole thing and I think that we have a winner!.

Agreed!

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] Lean on WX work this weekend

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 7 May 2000 16:00:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82333-2000.05.07-17.11.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Russ: Cool on the wild success on the hamfest. Based on the interest at
just that hamfest, I shudder to think what the interest would be if we
really tried to publicize the station! It is nice to have something for
folk to actually play with when it comes to explaining things like the
tipping bucket for the rain guage. Hopefully it wasn't a calibrated one!

This weekend has been family stuff and tinkering around with the satellite
internet thingy, so I havn't done much with the weather station
unfortunately. A big dissapointment is that the bugger doesn't support
telnet, so WinAPRS doesn't work. Hopefully that is just an oversight.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] Re: Running a quart low...

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 7 May 2000 16:09:46 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82334-2000.05.07-17.11.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron:

Have you done any work on the sensors? The fact that it is every fifth LED
flash means that something is dying regularly. The fact that it is always
the wind direction that accumulates errors narrows the problem down to a
few routines. The only routines I have in there that could take longer
than 100ms because of some loops are the routines that open and close the
channel to the wind direction sensors. If you run a calibration does it go
smoothly? If you have a pretty decent silly-scope, you should see a long
gap (3+ seconds) in the 1-Wire traffic. After that you should see a single
burst of data, 800ms of silence, and then data bursting every 100ms seven
times. Of that group of seven bursts, each should last less than 20ms. In
that group of seven, I suspect one of the groups of bursts is lasting
longer than 100ms and causing the LED to stay on longer. Can you tell
which one it is?

BTW: Have you tried hooking this up to the DS9097 on your PC to confirm
that this problem is with the T238 and not the PC too?

will

-----Original Message-----
From: Aaron Morrison [SMTP:ae4ko@amsat.org]
Sent: Saturday, May 06, 2000 10:26 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Running a quart low...

On 6 May 2000, at 21:12, William Beals wrote:

> Aaron:
>
> Your description of the waveform sounds like it is a very well-behaved

> interface. Here is a picture I took for Russ a few weeks ago. The scale
> is 250us per division, so it isn't really showing the slopes well, but it
> does sound like your waveforms are basically square.
>

I can see the whole data stream, and it looks much like your
example. There is no wind here tonight, and the T238 is racking up
the errors consistantly. Every fifth pulse of the LED is longer than
the rest, and it coincides with the sample counter (i.e. as the
sample counter increments, the led is longer, and the error count
increments). So right at the moment things are consistent. I have
looked at the data stream on a few of the "long" pulses, and they
look normal as well. (If there is more than one device being polled
during that flash, I can only look at the first one due to triggering
constraints)

> For any 1-Wire specs, go to http://www.ibutton.com and from there you can
> download the specs for any of the 1-Wire devices. At the back of nearly
> every device spec is the required timing parameters. From your
> descriptions, it sounds like you basic communications is OK though. You
> may want to make sure you look at a lot of data just to make sure that
you
> are looking both at data that is being sent by the T238 as well as data
> coming back. All transactions start with the T238 board sending an
address
> (as in the picture above), and data coming back can be many bytes later.
>
> The 9913 cable _should_ be fine. You may want to try a test where you
have
> the weather station on your bench away from the 9913 cable (or unplug
> whatever drives that cable) to make really sure.

I have the unit unconnected to anything but power and the wx
station, the radio and it's power supply (an astron) is off, and it is
still occurring. One remote possiblity that I have dismissed is that
I have a harmonic and it's getting interference from the pager
transmitter about a mile and a half away. I don't think that is it
because 1) the wave form on the scope looks ok, 2) the errors are
only with wind direction and not the others, and 3) it's a stretch
anyway.

>
> I may be trying something similar to you soon. I didn't have a good
place
> to put my weather station on the roof as I had nothing to attach a pole
to.
> Since they installed the satellite internet dish on the roof, I now have
a
> vertical pole I can attach my weather station too. Trouble is that I
will
> be running cables behind a dish that is having one watt of 14GHz plus
being
> broadcast at it. At those frequencies, one watt is a lot. The installer
> said he accidentally got in front of a dish when it transmitted. He got
an
> instant headache and spots in his vision for about twenty minutes. Scary
> stuff!
>

Ouch is right! But the results sound like a lot of fun!

> will
>

Random Quote:

My car isn't broken down, it's mechanically challenged!

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(B 6`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (```+``\.``````(!_P\!````40``````

```
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`G````4D4Z(%MW>'-I
M9UT@4F4Z(%)U;FYI;F<@82!Q=6%R="!L;W<N+BX`MPP!!8 #``X```#0!P4`
M!P`0``D`+@```"H!`2" `P`.````T <%``<`$ `!`",````7`0$)@ $`(0``
M`$8X,C<V0S%#,D8R-$0T,3%!.#4V,# P,$4X.4(S0S Y``<'`0.0!@#8#@``
M(0````L``@`!````"P`C```````#`"8``````L`*0```````P`N```````#
M`#8``````$ `.0#@A!'T<+B_`1X`< `!````)P```%)%.B!;=WAS:6==(%)E
M.B!2=6YN:6YG(&$@<75A<G0@;&]W+BXN```"`7$``0```!8````!O[AP]!$<
M;"?Y)"\1U*A6``#HFSP)```>`!X,`0```4```!33510`````!X``PP!````
M%P```'=M8F5A;'- 8V]M<'5S97)V92YC;VT```,`!A#FT%A"`P`'$&(-```>
M``@0`0```&4```!!05)/3CI(059%64]51$].14%.65=/4DM/3E1(15-%3E-/
M4E,_5$A%1D%#5%1(051)5$E3159%4EE&24942$Q%1$9,05-(345!3E-42$%4
M4T]-151(24Y'25-$64E.1U)%1U5,``````(!"1 !````K L``*@+``!+% ``
M3%I&=:ZA>RIW``H!`P'W( *D`^,"`&.": K <V5T," '$X<"@P!0#O9P<G$R
M#_8F?0J ",@@.PEO,C5F-0* "H%U8P!0"P-C`P!!"V!N9S$P,S/I#&!L;@(@
M90NF#_ *P!T"(#H*H@J$"H!(879(92!Y"& @9!81()$`<'D@=P6P:R "('@@
M=&@8( ^P`( %L'/0/R @5!FA9@#0!4"U&9!A!4!I&S$$(&48$!IR&/!F!I 9
MD"!,1?9$&J +8',<4 > !B(;`R\:```> &9 +@&<;<F1Y&QXB"7!G%> *P&QY
M+L<:7QMC!T!W87D=4A@@:0/P;F08<&D)<!K0:4<98QLA`-!C=6T?(73/!Y$$
MD -@#Z @;@K `V"6=R%$$4!O`F!E;1AQ>G<9<6\8P!_@!]$#8'5[(D 6('.?
MA0(@'V F)R#\22 /@!@1"X 9@@EP&O3O!: 5X"'0`9!K&" )`!5P3P20&O(#
MH!60,&T$(&+9!9!A=0^P&5!F';,I\?QO<"#1*-,8("=W&P,L0/<)\!C!(=!C
M"0`K<1F2#W'^;A8@`R EH2%O`Z 9U1^!YDDKL!A"<G4N$2E !T#X:6)R&R B
M4AB !Y$;4>IG);!S!&!O&9 ?8!I!WS&5*",ET!% #\!T&/ %@6\)\!VA`Q ?
M8"T$\"WA+'\8,QS@*6,/L#4B*@(SD&'@<" H,RL9P06@(<#,<RDH92JP+5<B
M`1F TS*P`2!I8Q^!00& *D1_!4 W'P"0%7 E$"L0"'!SJRW!*[!D&R!A-O X
M*M/_*Z(#$ GP-? V\"XR&9$S`?\]T3TD'B(;M"K$#[ 8$!EQ^P=R'X%/*[ ;
M`PG "& XD/<KHD&#/3-S-O =( ]P-T;_',$%0"40!!$J<P'0*O Q8N\B=4+<
M-O H`',K8"WP&M'_&)(KH1F20M,^8T/$&W)%`O\>(BH/+B0K41XB&9(<<B6A
MWSU@(2 94DKT'X%#`Y$80G\C8#9@&0`>$$1A&)(;4S_A%SI"5%<Z'Y 7]SI@
MYPB0(= W8&]K3)0;@4,!@2^51%,Y,#DW&5)S&$$%P%!#)9(Y$1P0<O\E,!L#
M4O,DUAN!`_ <01F2\%0R,S@N(Q8`&N(8(/U4TV]06P/P-F 7.@KT,H#\,S8!
M0!40`4 DT2-@&M"A$(0Q-B M7-)/!1#>9PN !T %T$5A82HP7-,?%S9;Y%NQ
M"Q-;YFDM,>PT- % ,H Q/B$,P6!SN&(@1@-A%R ,DF(6M1\%T 6P!1 :``.@
M6U--`%10.F%E-&MO+$!A*O ;("X%L&==OQ<U8: &8 (P8@<&$'0(<)4]P'DV
M\$U-H3 V-O G`= JT"JQ.C)<L%!-"63G5&]B!U1!4%+X(%=8!@!(,0<Q1E$[
M(1L'D 5 1T+B9.AU8FKC(B%B!UMW> "09, '\'IE45!2,A #`!XQ)=!Q[G4*
MP$4Q)% N;M!>?U^*WULT"[870PKC"H!/`Z!<L ]FXF=B/R$%0#(Q.C&^,C;P
M.A V8 <P)3!"'2#N;%;A6^(7*SX6RW8`=:;^6522`0`$]")22,4A$!@0OP(0
M58$:`#(0.4!*X&DIT=4@E2 ;PW=/(2TK("@B7R'0=:8+@#LA&K%E'X%(^RC"
M>H-P.K!F81@@* !8T3\90'E!;9$$$274>R!E:_\@T3.@'X4$\ = &"![]P0@
MO10`,"M@), J02'P=@0`SR)1-O :`!M$;B<%0 EPWP= )T$W42&A3+1S"0`M
MM\/]6X4\A-O ],!LS=:8S(WF3[WGT5(-Y!BQD8AS0.K"#Y/]N0GSP=HP7-"@`
M*T PTBRDOT]@!O 8(#_3/6"#P6T_)'\;42PA?^$C($1AAV@7-&7^>&1 "U!\
M\A^Q?506`"&4YRBT`B!=0&AT/R=7A!N!_3*P8U*C0P$7-!F2(Z4Y$:\`D$V!
M`C ?8T4;R7 5X/\K=$S62D)+"9.H:K*-)P6@_PN :B!WT5;X7>"/DBE":H+Y
M.*!I+GSQ'- 9@Q<TFPW_F?$)< > `C!$$1F2)1"-8;^7AI'8(Z.;9'(%GA@I
M'X#^4R6P73&1L'-2&9($8)YB_U+B%7 L9)2U-@$Q8B@4%S1_C;)20:,%C'D9
M4B742,4B_4KR(I941!$_11CPI=A8$=]5@%V!G%%[(A^!*#&1**3_&X$$8"C4
M>'$8H0$`@H U\+LK$1XB< ;PGQ(7-&0(<?],HQLA'+-'PHM2)R.JLZ,%_U5A
M/6*MD@I0+X-=,2HQ'B)_%S24LCIA?'$Y4%H>=>)&_P6Q&-(Y]4@B1!$SH26A
M%0,'%> H$ ) <#HO+W==N- N,I F4)%A+@6@;?];@Q7D'Y N,@-2*)480HM2
M]X8X)7 )`&&2%+<3?K,8TN](Q3GUK<0FHD%81(C@DQ#_*Y(6(!]"=O<;M*W%
M2"(;<O^8Q&Y (@$ID0=PKE,*P&1 _P_ !) FHF'"CJJ&D7?H1!'?&U%YFAA"
MB.,I06TC( ,`YRM QH,;<D]+&8$(8)&@_Q^!=X%V]P# &/&5(262`, _*=%(
M`+M5L48X`CUW(&K_*V#+G3MG=:8L@HVR'B(&X/\<01LA/],;!"L"'B(9T05
M_F(8\%=8A42<0C_3=::YD?_0TY,!.M)/,3IA`( :P<DC_TV!;G%7# ;@"Q$9
MPB'P;?*Y+A%D9&JQ!"%UM2B<4=<YA7W6`:!O&! I/R0_T__568M#*R#+$1CA
MTQ C8B-"ATY0=HX?LCDY,3,R4>DE`2!?-U1?W<(<$!8@_\HURRHZ8!CPT<%J
MPD]@NT;_I8EV`"_#'2 HHDUR>$149;\K(#[PT4$A$;K'X$HH!;'_,A +4,H`
M=O=/8"-1&\$8</\%$!@0'57@HSE@R[:#QGX1_V[WBO0H(QF2R,$%0#(0.1'_
M%B :T,.");$8X!X$A<*ND/][(+9"DA1L\)RVYB2>M#*P=R'P[\*-8B=6,?##
M2 !P_PM0&/#:D"X1C,$"(#EA/F+^9HTG&X'QQC91&5 B\6,1_Q5P0B(8H9Y!
M6_&N@000,I#_,H UH1L#* 4A\#/0! &?)/\;`^V;)= /@01@R-'S2"HP_P)
M'B-\@RC!/O'GN JP*C+_DZ76@L/0`D#PX@;@A=$ET._#T#T!+C+\(FPKL.=R
MI3-_&(&#D1X"&4#1YH8'*R8Q_^O1>-5^LJ>S&9,VLHVE4I#_9T$%-".E+()Q
MI"<C5P,AK>]7ZC0!Q)$_)#,Y8?.BC*3^=$1A<:08T0)2=4QUIB@`_\LBW='C
M,=*#'=?X\ %!Q##_)9([LUC@N7 "DYH@@X(T]?TSH&\AT)LP?-'DR"6PEF#]
M<W!M>P+EORS$*Z&<42@"_U@#'A,EH@!P1%(U08PR):#_'X!UIF8PF?$LH_20
M76!-@?^NLYK$3Q)0`"A2.R' H-%Q__IP3Z(6=T?"JP"H0#3U=:;_E;$B0#)A
M&-2+-!A5%2\E@O^ ,R8QZ,+ZUB@`6=+:!]W1_S(!;=/HHRL"$-$!LAS#T>9_
```

```
M*"%*LJV">0``<"N28'!'_$AZ$\&!\:XT(^=BL+S@_^B@/6'2`J4BO[,NDN?
MPS'__F%2,$01)U=Z@\UA@$4:MO_%>-:PFB"1`>_0]V":(380_X/C,Z #P;O@
MY\$V$1;B'+3OX^&[X% !``AD?0,P`[O9_QJS-A&$P+S@1%$!=$@@6##?VK-3
M`H*$O:0`TW054*.P[_20P]&Y,$(#4^B@E=$N1_MF8#J0(8G_<D*.(I+"D9+Z
M(:OP0C<"F-26<$H1APG]S4=F[O Y=>FW6>>*7%Y'IE(!D>?A475U#DWTD/\X
M48-5*:'L0+O@O(+&TO.Q?Z.0--#+<(D51-&NL4L19'\^.T!-RF*D4_>!TM'L
MLV(_=_)[<.^3;/,7`5%0=VV[>W!TH4"YD99@TL!R4:#_N8.*@VC Z3%)!]C3
M?T'HP/_+< -P5J"T@-91\S!6D%&1!BUL\V!@-3<P-TW^0'H`LC X`&(@5E!D
MDHIZ"GU:L !1H ,`$! ``````P`1$ `````#`( 0_____T `!S#@G]#/;[B_
M`4 `"##@G]#/;[B_`0L``( (( 8``````, ```````!&``````.%````````
M`P`"@ @@!@``````P ```````$8`````$(4````````#``6 "" &``````#
M```````1@````!2A0``MPT```,`"8 (( 8``````, ```````!&``````&%
M`````````'@`B@ @@!@``````P ```````$8`````5(4```$````$````."XP
M``L`)H (( 8``````, ```````!&``````Z%`````````P`G@ @@!@``````
MP ```````$8`````$84````````#`"F "" &``````# ````````1@`````8
MA0```````!X`.( (( 8``````, ```````!&`````#:%```!`````0``````
M```>`#F "" &``````# ````````1@````WA0```0````$`````````'@`Z
M@ @@!@``````P ```````$8`````.(4```$````!`````````!X`/0`!````
6!0```%)%.B ``````P`--/TW``"C`(4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

31. [wxsig] [Fwd: FW: Reed Switch Lifetime]

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 07 May 2000 18:36:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82352-2000.05.07-19.38.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

To prepare for possible questions that people might ask me at the
hamfest, I wrote to Dan Awtrey of Dallas Semiconductor (he's the guy who
designed the 1-Wire wx station) and asked him what the reed switch
lifetime was. His response is attached.

Russ
kb0tvj

32. [wxsig] Rain guage installed (finally)

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 7 May 2000 19:53:55 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82372-2000.05.07-21.00.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I am finally on the air with my outdoor rain guage. I hooked things up to
the mast that got installed on my roof for the internet satellite thingy.
 I'll let you know if anything blows up as a result of the 1-watt 14GHz
transmitter blasting down on the cable.

As a result of putting this together in the "wrong" sequence, I now better
understand some of your complaints about my calibration routines needing to
be more flexible. In particular, I attached the rain guage without running
the wind cal first and they are not seperable. I will add some kind of
selection process to the calibration routines.

Note that this unit also has Russes radiation shield on it. The sensor is
hooked up, but I don't have the software in place to handle two temperature
sensors. The software update seems easier than going in and desoldering
the old sensor and gumming up the conformal coating in the process. Look
for an update for this support soon.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com

15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

```
begin 600 MVC-001S.JPG
M_]C_X `02D9)1@`!`0```0`!``#_VP!#``@&!@<&!0@'!P<)"0@*#!0-# L+
M#!D2$P\4'1H?'AT:'!P@)"XG("(L(QP<*#<I+# Q-#0T'R<Y/3@R/"XS-#+_
MVP!#`0D)"0P+#!@-#1@R(1PA,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C(R
M,C(R,C(R,C(R,C(R,C(R,C(R,C(R,C+_P `1" '@`H #`2(``A$!`Q$!_\0`
M&P```@,!`0$`````````````0(``P0%!@?_Q !)$ `!! $#`@0$`P4%!08%
M!0$!``(#$002(3$%01-187$&(H&1%#*A(T)BL<$'%5)RT20S@I+A%D-3LO#Q
M)30U8Z(F1$54<\+_Q `:`0$!`0$!`0$`````````````0(#! 4&_\0`)Q$!
M`0$!``("`@(!!0$!`````$1`A(A`S%!41,B!",R0V&!D4+_V@`,`P$``A$#
M$0`_`,+74KV/M5!NQ3M;2[ZY9%H=NF#E6UMC=/I4TP]V:*<;C95@;HIIBS?A
M#A*"4[=Z5,0(@%0M\BF%H%3=D:M'3V0+PB $2.PX0&P5$X1'&ZFZ(&ZB"$U(
M`;HTJ 1NI0"/?= H(B!NHIPH"; 2GE$VE)00BT$;W0/=%1$=T%+I`:H(***"
M<^Z*A.ZEHJ4B%/=0(B;*(T@BIW10*GDBBHH5$!*B'!1"@G*-H?1&D$Y4I2E$
M$4]%/HIV02J41(4O= *4`4KA'=!*V4%"E%+012]E+4]T! Y1I!2T02%*0Y1"
MH &R-;;*6BBEI':D>REJ!:43%!70.>5""CQ2E[H%`HH<)T"+XM$(0I2:DJ*%
M(;)D*"@6ONC5*%0JA:41K9#=14(]%60%8@X*HYHV3-V*`&Z<-/-(R(*-I:(*
M("BFM&]MDJ-7R@<%.S86JAM[*QH5B')OA#OORG:T`<IVL;RJ$8K.$I#0=D;L
M\[*H-6H6@!$T$+LH%(I0)SP@!\R@@'=-5HU2G"H%'Z(445+4`I1%`A "H5**
MA12E0HI;[(L3LH5/KLI=%00E$(>:G%(&V4&Z@X4M`=E 4$"4!4!W0"GFH&M1
M+9111*B'=$("BE!\T4!M1!'Z(&![(**("!NAPI>ZECON@-J A*H#]T#@V5.Z
M`-*6@*%*6B"@@%;($HDT@!:":E"I5=E*W""7LB#L@H$#7Z*6@C='W0% J!11
M4[*(H'E "HH2I=*@CA3E"U+1$W0I0H((>4J8I:*"<H4B=BI:!5*1"E^B*!W"
ME;(H5N@Y[:3WMPJVFQV37?=5B(".ZEH%`FBHHZDP*K!37915C2K1PJ&JS5:N
MH?4B'D)+4!346:[4#CYI+]% FF+ _P"J8.%7:JNT[2FF+0X4BPV3PJP;3"@J
M8L<:2DJ"BH>41+0!W0]5+1?P8%'E(".Z-H8;NA2%[* V@A&R4[\)B@>$"FP@
MB:I#911[*4IV1VI!!MW04XXX4M!+4'*BEJ*EJ"P@B?= >41N4M\(WW0&U+0!
M1M 5`4!^B/\`)0$(@H7Y*! ;1045$0*/93T4`%HA&U+5$M&D`ZP$+0-2%J6H
M@BBG92PIH-J>J W1I144`3<J4JB*<TB5`-D$L H$HD(4F@7LAJ1+4ANE%'5R
MIJ[):4(*:"39Y4!0`*-(@@[** *+0GNAR$2IW0+W*"*'"*BFZBB@G'NI2A*"
M#EA.!2J!L^2L!5U@Y"%=U 4PXY12D*<IR+W"4@_1! :3`V@B#N@:T0$FH)@Y
M`>R*75:B$,$;I+==U+06!PX3!RJNE :[[JB\/I34J@XHWLFF+"4"57=(EU)H
M<'S1M5VAJ31<H"J@ZD=2:++2H6I=H@WLISPE1 **:[10I'L@6T"H>4-_-114
MM!1 05$%+0-:EH?1$* C=0&T+]T380&RB$ $24T$(DI-6Z!=MZJ:I[4)X2%Q
MI+J_131:'?IPIJLJHN[V@7)HNU*:ME3J4U)HNM#5NJ]=^Z.KU33%EJ!U[)+4
MM-%ET$0J]2@=MR@N"-JH.*8.5@M!4+E6"I::+ ;150=2>["NH:Z4NTA*G"F@
MDVIW2$[J6HI]E*OE*"CJ5!+:X4 4NU.54*:X"%[IB+2D;I:J6H5"*W04T2E"
M-E$+5T3A!%"TT#NHC:4\!0<<.W"L!W5+2K =E=96AR;4J0[[)@[9756:]DP=
MZJK4`H#NFHLO= E*#NH!:FJ8<J7LA>R@*:F'M2RD").P30UHDVDNT1L@<%38
MI+1!I!8"C9OE5AUE'5N@>[4)0&ZE;()=A2U/1'S02TR4)@@:Z404)6@0B-B$
MO*ETB++KA"]DMJ<HJ$V5$+4Y4!4/ZH<E3NBI:@W0M,#LH"%!00M&U%'S4!V0
MU)=5A30Y=2!/JD+O) NI13ZDI<D+E;^'F_"G),9$-@:B>3[(%U(!R4[(=D#Z
MO5*2EM0E$/>]HWND!4!O=%67L%+M):(*J'M$%5WORFM13WV4ORX26B#:HL!1
M!W55H@[(BW5NC:K#D04U5@*;4J[V1!1#6I92VH3V0&U+2VC:`VC>Z'DIL@:[
M]D04H4"![0M5R3QPZ1(\-+S3;[GR5I:1R%0#NA2EI7O#(R]Q`:#5G90$<J6%
M.$"@!0I$J'>D`0[H\I55<5J:T@3@;*,PP/"(YY2 D%&U=#W:;9("BFAPHE[@
MHWLB#==D?= (HJ7:(" %)KL(:'LI2-E15 HVF&Z %HA0$(A*$RH8<)N4H5K8
M[%JX$ 1I6>&;1\-Q[;*X:JI,&DJYL81TT%<35)80I5*TA32$-5$(*PMI+2@7
MNB5*403:E+4JD%%3^2BA014Y1[(=T=EFB*72EH$J*A0*8*590*04*/W3J<44
M&C$Q3+(W87>P(L+)E]>B;#">I:X(GOHTWR!XWJMET,?)G<]K<=C&R ?GWV[+
M/U#I6,.GPXVBFP-#&EO8!>>SJ7V[3,],;<G!GE#</(,H+2YH<VC0Y)[=U97D
ML'3>FR09TN7))&X.C+&!E["^]^RZ9'DN_.Y[<;]DT4/5+I*LX45%=$4C7EPG
MJQRII\DP5TB$^A'0?HF!=*.DI@T[*RDP44AW5Q8E+:3"4G<(J5OLC1"8J(@J
M`;)@W[J8(+3*<"E J@A#E'2I5*B4+4[J4I2"7O7=13U2RR,AB?+(X-8T6232
ME]!P#2SY69'C#2]LCG'?Y!QZDE<^+*ZEDE\F)&UT>Y:)F5MVHCDK1BYS.I0R
MXD[3#-II\)-$@]QW7'^6=>N?57,]L,_5GR8ABG:7['4]CB-7/;OLN=#EC\7J
M@^5CP0PF_E%<GRI:NO\`3(\?IC'8S2-+Z>YSCNVCSV[>07FF]2^=C2* %&MO
MLO#\M^7GK^WVZ3+]/4OZYD!\<+?",@(;8!.L^:K:Q^1CORVY4LV<UWS,+@-#
M?)E]_P#4H])QL3I0=U3-G D<`Z!KMG:#P0-KOV7>A,&7$V=D0+;):XM%GU7?
MCX^NYO=]I;/PYO1,SQ728[J\1FY+I"7'[\KL<JG(PL?)+3+$-37!P<W8@_17
M+U<<WF96;4[%`\(H'E;9"D"B0I5H.#? 37MZI ;3!$$&DPX44'V0,.%+Y*"*
M!@>$4HY1M4$;IK2^>Z-[>J B@F]4H*/*:@VBA]%*30P_FHANFHGL@G9$#?A$
M-3AI[!7V(T;K=%$#'N5E;$3_`.RUL#FM#;V6XS1$8#J-)] HA*UMN!5JTRI+
M:[)".ZO<JG ULE544":3D)7"N%%#A [H6>ZEJ*A"4$C9&TO*@E]T";4ND#RH
MHE!0E"[11[HD;H*6H"=Z0444$4M0A%!5/.S&A,DI.D=@-S[(P3LR<:/(C#M#
MVZAJ%%8^LNTX'%GQ`#[45BQ.J#$QNGX\H-Y+FQX]-_,W51-^EKE?DSJQUGQ_
MUE>CAS<?"P9LZ5DCO"D:PZ1_BV'ZKG=4^)GQP.<_H\D;-5 OFY]1\J3(@Q<C
M'?#EA[L=Q!<&N>-P=OR^16K3AY6)B-C<R=K''8/\0 5M9W\^^ZQEZNKLDQ1T
MO*;F].BR&QOC:_537BCR5M"'8>7:E+7=ROL:M$,H( I@Y4 MI2K3<\HA,0*1
M_DB&^:(;NM -35:9K1RG`%IB:JT&[3".TY1!`5359AOA+X/FKK"BF1=5>$.R
MGAA6E*4PU664AII66@5,72T5$4"@E($HE"D$561",B/PG.(C)&L#]X>5]E;]
M%S,SJ;H;@?C.;(_\KC)I%=G A<_D[YXF]+);]+L_-;B-:SPBXN&P!TBO1<3K
M1G;D12R.C;F1!I#V[.:*NB/Z^JPY.7,^0O>_6]NVHNY]/1*Z:3*U22-DE>YO
MSEQO8#UY7S?D_P`B][/_`([3F1WNC]39U+!_".+FY'AN:\N[@\.[>8V7BI.E
MY1^)9.FXSVY$K9!\Y;I:01>H[[ +K='DE/6<3*C,<[7R.@>#\E,&P==T?;T7
```

```
M2Z5)%C?%G5Y,G2U[PR.*5QXJ[ /K8'T7IEG4DZ8S"8?1NM";7(8!-$T1^+))
M\KHQLUH:!O7FNKT[#S8>J9,^1)$YCVZ3H9I#G7=@;!=4'OYJ!=Y\7,]QG14*
M%J7:Z(BA4402ME VT0K&ML**\RWDIQOPE \DP%!:9'W3)0+14!1"GDB @B("
M@\@C2HB@%IJW1#4`XX1%IM-E$,*8FE"*L$9\DPCM7$U4`G&ZM$1(X1$7HKAI
M6K5%H W5`C*L:TUNK"M0TGA1RI!W&ZN!6F1;LC:6^-T=2J#>^Z3E&T"@!"0L
M5FX4I15!;NE(I7.:JR-U%5E*>4[DA44$*1*"BI5()J0X*@E;J(THF*E;6I7"
M("-)@%<*C+RX,#&?DY+W-B:/W6%Q)[ ``\K8R)\GY&D^P2307H:\$$.MI[@T
M=U*N/-G*S^J8#LV;%9B89:3%$7ZI'D_O./ H`[>JV=%:'X6&]S6FL=X82++?
MFHUY<K5UEPAZ:-MC(QE>]K'\.Y,$N-%B,<3-C1.,H V;J?\`*+^B\MY_U8]$
MO^E74CB+7$[^BJDZ?CRN+F%^/*>9,9YB<=[WK8_4+=I1H5PO3.9'GO3$&9T$
M5,='E!H--D'AO/\`QC;_`/$>ZM@<^5A+\>2!X(MCR#6W8@D%:0T6B&[+7B:J
MT(Z:5M (D"DQG2:#LIH[JP';= E7#0TJ`*7:EHHC8%$%+:A-(8>T-22U+33#
MW2-JLE0%34Q9RB56#2-VKIB$44#LC5H** .RB*@0#ZH(E E00D >5+RG6,MF
M1G%S7@QQ_LPX;>J]%G3MQL":5Q II W[G9>:P\9V=*UC:&P<2-MN];+P_P"7
MU>L^/G\NO$_+E2Z1D![M6FQ8N@Y=+I>3T^+IS&90<[)$OA2 &@QM'YQSJH"_
MJLG7\&+IF:/!$_@O`<7S-:*)/:NWT6/&R8A*[%R)#'CO-DM;;@\`Z?INO)QS
M?CZS(U?<=#*9-TYS8FN<7Q?-0(T[[@BN+ W]ED+VSM,KI)AD/<7.`=\OMYE:
MV8SX9LC R(G_`(T[!C0#3[%;CM2Q$-@9E,F#F20UL!L#Q1/DE\K]+,>AZ7F9
M0Q9(H7,?,"T!LA+G?\/V7<QGY#X@<B 1.\@\&_\`1>6Z%'DY$4LV%-)I! <'
M.IH?R=N#SZKUS=FBZNMU]#X)?&;7/J^S!11"]UZ&#7RI:"FZBG:**T,'HJ&J
MUCJ4JQYH,]$P:K6LONH6T%UQSU36Z;=-I3!MJ8I-Z1]E8&=J3MB)3$M5`)@V
MJ5PB1\(W28FD#/+=.(KV5K8C2M:RNRU(FJ1"G$:N`I2J(5Q%8;Z;>BL#`1PF
MM0.5!#*0TULG#@4U"_5$U52=H3%EI2-*+H:04U )04;03L%"H>$"@*@Y01M
M1RI=( [)'% 2_G95N-E0FDI_52J!2\HD&D"">5EH$.4:*FDCW0@5Y(D(TIW1
M4"-(`=TP'F@`/V6G"C$F2T$6T;TJ"-N^RD74?P><S&CQ79.5+'K#`[2UK;JW
M.[=^W99[N<KS-KT#_P`M>78+DYT9TNV*>8]:D.IG4(,9O(;%C!]?5_\`HN1F
M.ZXUKO\`XK'+ML),1@_\M+QR^WHL8NK'5TIH<X4S)91^CN59\-X<&+TSQX=7
MB9AURDF[TD@5]!^JX?6LZ:7'_"YD'AR;RLD@M[9"T$Z:-5SZKO\`PVX2?#.#
M+18W2_5KVT@/==^2[?'[[UCN_P!,=-%>?S_C7H?3LP8QFER0/SR8K&O:WZZA
M?T74Q.L]'SFL.-U;#<Y_$3I0Q_\`RFEZ'!L4!-)@W= M* @V-T1P@!2;LJB*
MLJQ A05W?""<MI*0I6@M0E&D"H):A4I0J*@12H]D![HCV2HW2J'NBI>X26I:
MNAR@A:B@BA"A4*#'U'%=FXAA#@T$@F^ZR2F#H^,Z+'?JR9B-#7F[(V)KR767
M/ZM.[&Q!)&[3-8 (K4 >:7'Y>9)>_P`M\W\.++-U!S)\*&)N5');Y8HVZ[/=
MPX(7C,D.@E<UXH@W1&X[KTD<L,G4F"3*=C-$6DS.NC]+6K,Z4>J0:8>LX>9I
M)T,D=HD%#>AW^Z\$MZ]S:W<^G+Z=)F=3&)C8T3I7XP<YI:-%-L?+8YY]U6V-
MWXN%DY?&R>0V;[7ON?+=8^BS/9D38<>5+CN>W1JCC#W$]J::LKIY,#^G96)!
MF3')@CHZFLTN`-7;;V(WL7R%KKB6;4W'L<*##Z=C0X\#FM#QJ%OLO-<K9:\P
MV2;-?"V*0ZX@6^)HU.T]@&@USON>Y'9:,I^6UCL?'RLP:2+\7'&EQ'D[MY]]
MNZ]D^3)]>F<UWU/-8<'-ERW/#X:TG27C\M[;>^]K2^:%ATOFC:ZQ\I=O]ETG
M<LU,7(I >WDB#RJ'M,URXD_Q#CQ2&.&">>4&M#6[_I:F-UIW4'R11P10N8W4
MYL\M6+JN.=UQ_FXW)6LK:(J-C=*Z(N/&ZT#W1L'W7MQPE9/!H[I@P!7%ME.Q
M@*F+I&,'DF:+.P5P:T!0M%V-E<32`"^$X8/)0-Y3=E432"@103 A0"RB:%;*
M44PX4-GMP@0[);3N%I=*BA>ZM8ZRJ:3 TH8T@A0BU2Q^_NK;M:0FFE"*3I0=
MMU%*HB1LA5()PH%-D!:BCV4(0NBH32":`AH'DC:A*!="4M5H*!4%.G=2MPK*
M4TA%U714TJS3NB&@(:J#4X9NBX@=MDP?Z(: 8FC9CP9,F?+;3'#I?( 3\@-@
M4.=R?NH/?E9>J8 ZKTG(P'3OQQ-I_;,%EM.!X[@UN%GKG9B\W*?+^,_AG'8&
MGJNM] Z(X'D_4T N-+\:]!F)`R9F^KL=W]+7D)_@+XACR?V,$>8SC6V=C;]2
M'$$=U4WX,ZW^+9#D8;<<O IQD!&YKM=KA/C=KV[?5LJ+)QHLS!F;/'$XAV@C
M8.:>0>."DGZABO\`[,HX&9F/'DZ'!T/X@!Y'BG]T'>Q_-)UOX6C^'^@RR09L
MD[YG,\2V:0"TBJW]3]EVNC_#W2^L_ V%!EXT8D<9/]HCC:)FU(2 'D$^GLM\
M\Y<2W>=_#Y*-A0OA=7X987?$.$&['Q!OR0O9Y']E\%%^)UJ1A ^6.?'U6?+4
MTC^2Z70@CI_1I8\J5YS<MK=B]@$;'?PM\QYDK7C=9V/2:CJWKZ)AN@&A-P%
MTCG4I2DNK=357L@9`\;(:Q6ZFH4@#N4J;5:A&RBD[J%'CLEO=9JHIRI:BBA6
MY1I11 1RIRHA?HB"HA:-HJ=E!ZJ6@4#<*?5+:-H$EE9#$^60D,:+-"S]EPW3
M975.HAV+# WPVEK9I6!WA WN17)\NR[<Y<('Z(FR/K9KN"?558D#<. E[FZW
M.+WDD- <>P]!V7+OF]7/PL]>W"=T/-Q':V8N#U :""R5Y8"3[_1<S/PLF/*8
M]W1F]/<(SK,60)&.-_F:.1M0^B[N;UZ6!CQ%C4^Z:^2G-.W:EYJ:63,EF=EY
M<T?R.<QK;<'/L;$70!W7C^7KX9/'EN;?;AY3'8V:,AC7L(/SD&JVY6M\SG8@
M=)J?XE.#K]=]T2^-CM+M4C3L\DV2#RES,3'#JP\IKXR+W:1HO@$4N7-G4]KG
MMV>C_$1Q6-C&-$6DT7-:&$^FPW]RNE-UXRZ@<:X7\-UV6&O]:^Z\M'$!CBWM
M+HS1\/<;C:_792*;(&H8Y\5XW U:3[[E6_+\D];Z7(ZV%EYTLGX7#?,Z0DO<
MV]F[47$_U[+N1]/QL2ILQSLS)F/[)K'EMGT(-_5>?&=%@9#,?"D=D-DT.E<X
M:7O/=A(_=].ZW8N7U#JW4A/B0M#H&Z7:?E8VUOF\R^_=1Z!F//C'Q('ZF$6<
M:1]T3Y/Y\^5;E2^'A2R2/;#0W<1J`]/5<MF1U# +Y\]P\&Z)O6-^PH[+HS8\
M6?#&YQ+HG4X-O8^X7KYZV629?^V?^V?H.*,?&,VEXGD))<1O797YO3(,YCGU
MX<Y%"5G\C7*&2[5/%AL=H>YNJVN(<UH[[?99INERQ,8_"RYW2,=K\.60D2?;
M@E3))DFCI ["D4@*(*]K@<528.K9(#8I2U3%P<F!`5(>B';FT,6@[IK5(=:<
M.5U*?^:-4D#E-2:BP$%$@4J;4+K":&/*5+>Z&JBHI[1 "K!\TP=Y*"UK1:L&
MP5+'[*UAU!4%*=T])2*50JE;H@(D**6T"-TQ"1UA0&E*^R7CV4!K9%-5H4I:
M/9 JFR)V*6E WDI>Z4%&^W9 ?.E#NA:G9 0`C0!0M2T6&OE1+J4+DT,$P)"0
M.\U"Y#'&^+P/^SYV+BZ>-K0!W-_Z*_X8?_\`IC%#FN:1)**/^:U7\0CQ.D#8
M6V9A'ZH_#W_T&$']V63_`,RX[_JY_P!.^?Z7_KL:@A8[*DDA0.I==<<7() [
M=-J1,2D"VTVJD-0*$*6J:4VI0(H!JF]IK4[($K=*12L0(4JQ425$U(%JRH'9
M07Z(U2A""6@I2B@G-J=E%$$4440%0H(H(LG499H<4F-K2W][5&'_`,S2UK-G
M8;,[%=$X$GEHU4+[6L][XW%GV\TP03PY1D>V(11!P &FR2/\/U[=UFQ.D9.8
MP,QF1D-NY7D`'?@]S]ENP<%^1EEAX9\DCQP:[7] O28V/%BP"&%NF-I)`N^5
MXN/A_D]].EZQX3&Z1GLZCX+,/&GFCNXWD:';;<D6-T,K#R\3-DRW]+QXVPLJ
M7'9^T8 6T3M=<V-]E[?/:'8[77#&6/#A+*:$=7OZ^RY^1GR848&-+"TSFX9)
M6;O=R7.WH ]MNZZ7X>>)]L[:^=RRX\439,:9_B/)\6,_E(VT_P#_`$J83DL@
```

```
M.2&2MAU^&7@?*'5=6/3=>BZA/AYQ;D9&,QN5XFG7`0(W#5;KYN[.][).EY.#
MB=/=A.FR8W&64F:,W\NQ:"T[=NU%8M^.S[:/@]:.%AP3$0> ^0NE=$0'N!V+
M75OVM>K^'SC-Z)CQ8U@-!+@2+LD[FEX)OX#21-B0R@L#6FWL+3ON-+A?/>UN
MZ3GY_0F.>UK,K$&AC] +C'9)&JN_YJ6OA[YER%CW[RS2&/(J0UI/<K')^"Z4
M'S:!&9"+T-(L_1<1G59>J9TC,(1F)T@,<D@WBVHD_P#H\*PYO4>GS28LDF/D
MM+=.J-Q<`-ZKU]UOOYN<W/\`U)S==+IC& .G>\.GDY[T.:M/G]1.+(V**-LL
MQ-%KKV7(9U#"9A1ATDD4UZ/V;0=0]SW54&4&9T<V1J<&.NF&S_-<[\LYYG,7
M/;T@<CJ58]TX;:^D\QP;3@*MH(3[_1:@A-%0% GMW0)KNH'#J3!RJU*:DTQ=
MJ1UVJ=2.I-%H<IJ5=J H'U5:EDI:ONB-NZ @&]TQ'"@4M$,VE:RU0.58UQ"H
MT#A2A2JUD=T`\VFIBXJ*O5ZJ:MO5!924M0U&D0Y%#1M24MI6:MD#28:KJBH;
M3NH<<H6!RIBD!434"I6Z!*4Y3D(594"THG+:/&RE"T4MI2586[[(>&2H162H
M#NG,94\,IE784E+95F@(%MH>G,ZS1Z7*#YC^:'P_MT@?_P"LG\PFZXT_W2\A
MIL/9?MO_`-%5\/'5TLUP)Y-_LN'_`"_^._\`Q.KJ4)[H4FTE=L<$Y1W3!G=0
M4%<`I'24P&]HCE,35=4IO:LJU*"8:46>44:4H(!VI!,=MTI*+$(0(4)4M12H
M$)B4%E04X440$CR0(4WI1!*014(0#A1%!03A$H VHHH-8UEAK0`3J-=SYHE%
M#L@IR8()?#FGB\0P'6TU9:?,!<ES?[[R0,B-\O3W`@1DD 4-B:YW]>Z[;VA[
M',<`6N%.!%@A2*)D;6Q1,#6C8-;LL=<[6I5$^?%TK&C)$D<,8#6-A83I' "\
M##/A,^*Y<[(U'$G>]SV `'5R#7'8`A=KK;QG=8&.S,=)`P:7L:WY8W[V#Y\!
M8>M96.["Q<0X[)!%" ]^GPWZ^+NKXKT7G^3NV_J+(X9F%:?#:[YM1!'UK96Q
M&21CF,+!&^1KG,JP\MNN]]S]U;#D1Y[<-L.$Q^5'`Z*5E:6N=;M)O@&B-_1:
M(^A]8_!'7B1P1,=XCI>7OL<5R -_(+G_`!V;95T6],R9NJ867!DXN!),\MUP
MC51#2;+"0!L*KO:]6R3K^%CGQ!A]48!8,1$,I''Y*IWW7+Z/\.XL^.S(SW33
M'42QH?H'<'CG]%=E8.7TC5D84KWQC<ZC>G?8;WL%UG77/$MB?=QP)L6)H:^-
MLK8_$\0PS"B">PTD^@1;/K+0QOR7I)%D!:V8YR=4,LT,0<!('R$`_P#,?Y+)
MF844,OC,EQ&R`[OA=X=^X:*7C\;W_:M^H]FU7-%*MK2G`(7W(\AKI0.4TDA#
M0:5 +O7=`F]T0TVAH/=0"^Z(-!-H-;)2W9! 4P*@;84JB@(*9* G`5$&R8>R
M+0K&M%(A0=D:M'2+YV1H*H &Z:P`C5A(=BBCVI#A"T-2@>T;2C92T7#@I@;2
M6% =T#DJ`$J B]TX-<*H0@^2FGS5H=V4(W"&JP!2< 4G#0>5"*X3!46>:FDA
M/2E)BZK^9IW"8M'*:K4"B:78)F[]ME*1\T (0I/7"B"O2>Z 9Z;*ZE!L0:X*
M8OMP.L]4PF84V.929'BF$-)%V.Z'PLW5TJ7^'(?]; *X_7<3\/D2XV]1D.:?
M-I%A<[I?6,KH^07PNUPN/SP./RN'!V\ZX/G2X?\`[\G??Z>,?0]*(:LW2^JX
M?6('28KG!T8'BQO%.;?MR/9;*7:./LH"FD=@F4*(7L@FK9!%!2MU*V4010A1
M!2@'>DI3J4HI".%*L!/04JE%)2&E6(<H$*!%)R$"H%.Z";:D*44%$2A2HEH!
M% [**E(J!3?E0$\H'9-12E%#G=,PALC230!LE*57-/'CQ&25U-;S0M2V2;2.
M;T+'\-W4I9&T^3-FV< Z@#LN+&UO4LUL647%SWG2YWH#8 \#SJO1=E_5\B1
MIGP<":?&C<[QB:%CL6[W?T*HZ7E]'GS'2XT[O$D)=HE9I+'=QY=UYNISW9E]
M-?3'U[#CZ;UWI7560P&&6>/&D8^,:0[LZ@.:[^B]3(P?,P[@BC?<+'U?'@RN
MDY6-DN# ]A#'$?EDKY3Z;]_54]#ZF>K=*AR)-LD6R=ODX;?K5KT3)Z3[;VL;
M'&&1L :!\K1PN=F=6Q\21\,L!D('Y7#8[\%7=6G./A$!I+I;:"!=>M<GZ+S.
M5E12PP00DLTVV3Q&5\WF*[+A\_RWG^O*SEDDD\:1UC2TDU1_*$DC,'PQ#*V;
MQ[L/;('-?Z 5L3Y[\+KNP.DMQFNR.I2/!_\`ZU"O/D<+DS]/9$\OQ,B.>)CK
M<TG2\-!W-$5]BO'..^??JM:]T "42"-AP@-E8PT?5?<>4T<9<W=6&*PFC==V
MK.0JC*8P$NA:](* 8*I,-K(65V2UNM9:!R$!$#N$PUET[IM "TF#?E(8R%,%
M!;7"@NEH$>RK+=RBZ4?^K3 H4;"8!$$$%'9 >J*(8;A2D :4LE%+6Z;2%%.4
M`+=U`PE-PH#2&IHVYW0T%,7=U [U14#3YJQK4 F!W50U4C7"6[*@*(L`I C=
M`%2U02$*V1M3E0`#;U0K=&T"BIPH-D.5$##^:/\`1*%+4#6H4MTC:#B?$^-K
MPH<IC271.T.(_P`)[_<?JO#Y#=+W`KZ-UP./PSU@L ,C,1\C!_$VC_1?.A.W
M-Q8LJ/9KVAU7Q?;Z+C\GJNO'N*(9Y\3)CR()#'*PVUS>0O=`^)X>K.&+E@0
MYV]'ADFW;R/HO#/;RJ7,LI.K%LU]><"TT;!]D*7DOA[XL^2+!ZK(2XG0S*-4
M`> _R'\2]>YI::.Q7665SLPJ":D"U$*>$*V3((NH0EJDR%* (@(@>B %J*"*
M42QD6'M(LC8WN$^*UV9),R$%SH0"_;\M\7[T?LL^?.YK7C00K[+1-A3P023/
MC<6L%_*";'FJ0"6L=I<`X6+%)++]%EA#L@1:8\^BE(A:V0(3$*4BDX43`=DD
M@?H/AZ=?;5PH!YDD4 L&3U?&QXY0"XO:TZ'[&-[NP#AS[*Z/%R'.)R\LRM/_
M`';6Z6_S6;J\4O4)8<&)VEI^>0U8`&PO[]EQ^3KOQMYGMN2!B=<QIH 9CX<E
M-!%;7W//"V8^9%D,D>RZ8=)O:['9>/D@=TC,GBG?;V_*UP%:VU^8>E&O=:(Y
M6"$S2,<YK&^((PPDN%U]N=_1>3C_`"/EWQZGMN\S[CO]-RP(AC.E;(^-SF.>
M^5H)HU8'<>JVF>$NTB:-S@+IKKH>97$ZQ%!C8;HHYV@8VD/A:^RYQ-$U?%D+
MA2R&2HV-<7DB@T79\J\UT^3_`".OCOCFI.99KW+B&EH<0"30!//LL'4@^>2/
M!; '^)O(]S?R#^A6'&Z+G:&R23QQ2:::-R6@C>S6RS2Y?4NC";%+CX>_AR!K
M2!O9<2=^_=:OR]9_;FR$D_#TL4)BBCC8VFL%-KR"Y67TSI'5)YG3%C<AK],D
MC'Z7@^1!V_1<V3IW6NL1B1V5@N8YH:7MG L#=NH-%<_55#X1S))0[-SH7-+K
M<UFIQ(JN2!Y!:O=ZF3CTGTLS#UCI.%)C9>1&_$> V.41@DDFM)OCS7#Z;D38
M75W/;*Z"*0&)L@8"WQ"+:'7^[MNO0@R]'./AR9SNHY$T1B;B-B&]D@2$W;&C
MBZ67/^'.HR=.\.*3&#W2ZW01W1Y_?(OO^I6?X^O+5E_#J]&RL2;#GZF]T7XE
MV\[6$DL(V `WJR"1YKE9<TV0T9[H<:1I);^UV<;\A=KD1Y61@^+C3>)%,XB+
M(B(IU 5SW!&]]UT.LDL\!\>2Y\$T3"UK@ 6@<#9<OE[OCGZ)/;G.9<3WLV&N
MB-Z&WFFCP\C,878L^.V3L)I0W5[6=UE+PT M<!OM79:W/?@9CA!GM?HK]K%P
M>^R\O.?=:?0A%]TXCV"LKOV3`+]%CQ:0#3VM.-QNH$U((!7LC2@Y1X05N!\D
MK7$%76+0T@E!+\T"+]D=*!W[(B&E2YEF[V5EA J*KTU[(:2K*LJ%NR@JI1.2
M![JISK18:U 55J1UJ:N+-0W1O=562F%H8;4H"5&BU#0*H@-IALD)1%GA15@-
M)P53I<-^R-TKJ+@X(@@JB[3!U `)J8NM2U5K^Z;5ONJ8>]T;2:@.5 Y Y*"@
M*4OI0'A&TAD"&L%%RK% DUC8*%VZ(>T;5>I$/35PN8[_`.&9P#=6K&D`'_"5
M\GQR('9F,TZ1CR6 2/RO-BAZ$U]5Z[XJ^*H,"7,Z6,[\)/% "ZH3(^5SA88-
MZ:*Y)OD;+YG%U9_XM\SFZBX.LEW-_P#H?8+C\GNZ[<>IE>D!UMU7RD-GC948
M4X>X,YUBV_9:7;[#8K(JVX7JOAOXE,+OP74\@F!W^YE?9+#?#CY&^3PO+%I/
MO[*4#M2LMA8^N75;\BQ1L($KROPMUXR>%TK*/S@:<9Y_>JSI/]%ZGN;V7:77
M+,$&U$ H@/)'JN1_V@Q(^I/P<JL9S7O:R1SOE=1(W\N%UCQZKYEU6'+F^/LX
M^#+)BPR/U/HEK ]MCT&Y7/JV-\R5Z#XB^*&PZ\;#,FC1J&7 XN&JN/E[<?=>
M:9\;=>ZE*V#"$HF<*!:\7[T`%YF%KVC07%SBYS6L+NWF5LBR<C&DB=C3,9(P
```

```
M;&)N@CL=^ZQM:Q[-O7/B'!Z9'$,''=)&+=DR!SR\[DD@T+W7)Q_B;K1R,LY/
M58,=N5H\9K*:'AFK2-+?\Q][W7-R,;J/X%G49_'?A23>`)GSWJD#=1;IY_+1
MOC=?1/A;%PV_#V/*S"Q6S%\C7R"%NH_-M\U6L\_')=6].7AYLTN Z'PNK9FI
MK@UT,$P8;)(^:J ^O9>CZ;T^#%QL>3P\@3F,:_&GD>6GN*<X@?1;S(]P#7.<
M6C@$H4NDYQF^PK;E0C=&D%4!0HJ5:@'9"J34DD<&1N>ZZ:+*6_M0<YK!;G-:
MVZMQH(O:(AK?3.Q+OE_4K@9TTTF+^*R)Y<>";Y!B-DLN;5$[[#[=EQOQN0W4
MW\1.Z%Y%,D)<6N!VH]MUY>_\B<W,;G+M]?;@=0P)'-FA_%8[;8-8!.XMM'F^
MR\Y+D3Q=&RH7/EIS"QM'9K=32+^NH_5#*SHWR_M7E\K]5:B;)\[^H629TD$<
M<;0T>*\/+J!O<$6+WX7E_D\N_+,:S(NZQE132ZL73*QX!C>USG.B!.\9) +@
M.?JO0?#/30(8\_*F:_(HM9%IVCH\WW<O-Y,<O2<&?$R.G3#(F:TLGD(``+@0
M6@=R&G>_->K^$Y1D](SI-<K7.B<T[EHNP;]01Z;KM\7,O>U+].W5N_FL&'C
MEV1F9+_">R9P;'7S#2+!^]6M\L8EBDC)(#FEI+31%H10L@@CAC;I9&T-`] O
M7FUA1#B8^+J\"%D0=^8,% ^M<)Y"V)I+W-:VKMQI'(D9CP/ED?HC:-W:=5?1
M<63I;IL$YO4)\N3;68HW@:6GU-C[+/75Y_VQ9-=:%T$Q_%0F-Y+2TRLHG3Y7
MY>BL:TG\K21Z!>1Z/T:3.CEGQ.J9&)CAYCT%FHNV!-T0*W3S]!ZG&]D4/48I
M'EI+6ZW1$CTO8K'\O>;XF1U.O=#9U.!TD<8;G,%L<-B\#]T_38'LO&94[Y-&
M+.'1Y$/[-P<=A1XKLNK#U3J.,R1SLJ:40T'1DV-CQ^E*CK&5'UDMR!C,AR&,
M^=T>Q=WWONO/\GR<=SZRM26?;!# V/296AP/#3)HOO\`FV6V3J?3,F.AT:!K
M=)%Q3.!OL;O=<5KX2YCIJGB'(<-O==N3HDL66^)^-%A!K=9:W< =SMZ7]ESY
MG6>E?1@0E=*![JO2:M L*^X\<A_'`-\IFS6LY \U+ 4U<:A("IJM9M:(>FF+
MRZ@E#B"BT ML]D.>`B+!)MRE>^RD((4)M-#$J [;I+I,UWH@:DKG$HVB6)59
MW$I:)[+08Z0#?19Q=4^&4#&0M30`$X /97$UE9&3LK RN5=3?)1P3#5;F@!*
M&V:5A%HBD-+X8 M!M UV3DJL\H XA*31Y1(V59*BF)/935ZI"X]D"2HJP/4U
M[JOL>5.=TU5H=YH@JL)@:5U,6M?MN@XDE+=A"^R(FZEH@HVHH:E-2.E M'9
M-28$DTE(6/*ZKA]/GB9ER^&7C6+;VND'A_B/H;>K.EZLZ9HR,_*G;$P[5X3@
MRO;\J\3%TS-EZFWI\6.Z3*<_0V-O+BO6SY65E8#&PS"H9\A[(G <.D+JVW!*
M:?$ED,,\T3\?J, ;(QSAI((HB_7A<+W-=_'TX3L7,Z7E2X.;$Z')@=182#0K
M;<$A=J*1DT;9&D4X;T.ZH^*.L/ZSCX>7E15U'&N&5X%!S-BW;W+UEZ7D$3&!
M]:7?,V^Q_P#:UIET2VNR! !M6.WXX"5S=K/ENB@"6.#VDM<T@@C8@^:^A] Z
MK_>_3O$=_OX"(YO4]G?7^8*^=@`@;<KH]%ZF.E=3CGD+CCN&F9OFT^7L=U>;
ME9ZFOHUWNI:4_*X@D&C5C@JK*RX<* S3O#6@;-O=WLNEK"U\C8XWR/<&L8+<
MXG@+Q'Q5\;-AC=AXTCM(HEM'YB""+WV%]ES.M_%.=UG*CP.FQ.ED+OE;$S4!
M=;COWY*]'\-?!D'2'Q=1SW?B.KWX@(=^SA/IYN]^"L6ZU)CR#?A3J&)T?_M#
MU/$9^%C<)9<8.(E=$\@!PK8;NX.ZT_$F+C]$Q8,=S!KD/CXDC1;I87;-+NPV
MN^]E>W^+I',^#^K2B-TKW1!E-;?+A9/H!NN)!TKH>0[%_O3'S>KYKH6X[(QK
M\-K0-J=;:JCOP LV1J=/+2]<P9_@EO2@]S<MG5AEAI;MX1AT'?SL+WOP=.S(
M^'6F-UM$KMQ[!8V?!4&<R+^^*A@AC+<?!P9/V<0)O=Q!<23=\GU7HL'!Q.F8
M;,3"@;! PDAC23N>222258C2$;0"@1!KS41W410[J4C2-*!0+/=<'KW4&.A;
MCX^N1[)AKTMVO>FF^=_Y!=Z6(2QN8ZZ(HT2#]PN;C=$CQ<^*5CKAB;8:ZRXR
M55D^56?=<OEG?7KEJ8\[CXG5>IQG(?#(XB0QFSL"`#Y\;A:3\/?$,;"<#YO$
M86210Y(:7 ]G70(^I7I,[+CZ;@OR'"@T$,:&_F?6PI<K^Y<[K#X\CJ/49\)\
M4@DB9" [P^YHN&W;S[KS_P`'._FUK:\;DX\_3,B;&S\/2)1ID9+&"]HOF,D4
M#?<+CLA8,[I^,[-:S&E>RY38\,NH'57<'DKUG6^F]$CE9CPY/4L^=IJ22>5K
MV:>3H `W]MEYGKW2X\?(CBQ\?(9$]FH>(TV[:R6[?EH7]U.9)?'=*[>;.W'Q
MIL/JK)!-!*87F-P+V$&Z;=@LVOMN=B-[G1.HY&+G1SR]0#H9@W\1/*'.)#76
M6BQ>JJ'>_JN?T3*?UKK,>+EP&9\[/P\C(]M9:#3C[$:OHK,SI[^B?$3,,GQ'
MQ2-=K[/!(((XVH_<*W8CZ--()H:&?-K=HYHDUP/)VXJZ7+EZ_!#&8FQ3&=OR
MG4!7UWY_JLL&3D^-(R*268.^4F<5)'S\KQV/H;L;@@+;+T/&S V6=\K90-BP
M@#<=[%G[KMU>[-X^R9OMHB8W/DBRWND..UHT1/: USJW) )![4L_Q+(R'H<T
MKXXGZ:HR@G23M8 [[K;A84/3XGQ1.>;=K.LB]_8>BT;$$. /H0MSFWG.OM-]
ML!,'1>G1Q2RM9I;\HY+CZ>:Y,$4W6V@9+RZ"-UG5=7?:S[KOY>)#EQ:)6:O(
M]PG#&L8V-H#6,%-:.REXMN7Z-].$[X<CCD>S$RLN!DIN8ZP6EMV&ANUUZKC]
M6Z$)NN,C@GGFRF,MWX1HA,303^8CY23OZ[+V4L?C1.B,DD8>*+HB`ZO0D%<I
MSNF_#F)^'A+8?$)D^8EQ>[S>=SO2MXYYGZ-KY_+C0P1>))(_5>DVTG?U\EK@
MSWXL@CQLLSB2/1^5PL'D;C==I_7<WJF6R/%P8Y)'1F*6%XU1N;=W>S@+K>US
M<EV1T9[^@YI#L($3?L!J\$NX.HBZ]UYI\>SU6MU]*NFI-#G'?A>#Z?\`VCS-
M:T=0Z=%.3S)"[PR/I5']%ZOI_P`3]$ZEH9#U"..=P_W.1<;@?($T"?8KZDZE
M>7QL;W1;%5N::X*VEI LB@>#YJO:N%<-90F:TDTKPQNVP1(#2"%,-(&%6;M%
M!$/ 0+R3QLJB%U[%5$;\IW.2V-[W14JN=TU@4DNNZFK=07,<.X*<D4J0Y'5Z
M[(&)`2\E*32%H+"=D-=)-2/*!PY34ETUW1.VW=#T>P0A5=TETH7('J^ZE#N;
M58=LCK47#.:*2:0/=0O2%WJBH2E)\E"Z^"A5J$ ^Z(!=[IVQ%PW3!H:=T72B
M/?9$L('*L#@E<Z]NRJ:6D0`@.=TXI$ A`!.:*!0"]J4"FP1)" '9<CX@Z-C=
M6P)'O;HR887^%-5T*LM(L6#2Z]JG*IN#EO+@T-QY"7$;`:2I?IKF^WQ^`/;)
MK;(7:GD4%TY^HPX>-KR;$TEO=$W=XLW;M]N>?5<AKKP6N;;7E[B'--%=7X,Z
M)%UW.Z@<S)G\.&-ADC:[>=I?^4GD`$ [+AX^7V[>6./-'F=<<']-Z7FS,9\K
M_"C=(+^@V5N;A9&!J@RF&'-Q=(DC/.D[M=^H"^QXD$>'CMQ,&)N/CM_+%$*!
M]ZY/J=UY/IF%%\1]>^)\S(8U^)(YN'#,1=%E$$=^&M^ZWXY&?+7G\3)&9C"6
MOF&SAZJPBQQQZKCN9D?#W6)</*!&AP:]I-6"+#A]%VCI<+!!:>"#RH*Z`)_D
MH&_?U3Z6\_JLF5G18[=W#T\RB/<CXGQ,3H6+*]P=.V(1N9=46[63].%XTR]8
M^-.INBQ X1FA+D/%,:.-Z]^.2DZ#T#,^*YG23R.Q>FQN^9XWU'_"&V-R.Z^F
MX>'B=-Q1BX&.W'QVFPQINSYD\D^I5^R^F+H/P_@_#N*YF(TOGE%3Y#OS2>0K
M?2-^W*ZP/"444RJ"UY:;")>=ZTB]W:6@7]D@3;(8E[*#U0K[(\J!E H%.R*;
M91"O5111!3 I$040PW4"`<I:BLKL)\W5V94\FJ" `P1?X7U^;^:WD-<"UXL'
M8@]T@*=IW!(6,D:>/^)CBX_57"*']I,&^+H>'.<2`&TT^0[=U;/\5]+9T9F&
M<'\9CQM$4F+DDQ/!%?DL.L;>8J@JOBB'IAFDT8L[\UQ;KG?*=#.X: 1O8]=E
MSHVNBZ#+#)\/.F?,3X68W'$A8T:;) &K87OPO)Y9W9&L_+@0]09TSXC;U?%C
MD MX=%>H@.#@*.UUJ[^2U?$.:_?,^'EO@#<ML?@SQ;_M`#J:[C@AU;+MX\WP
MGF=+G&9BP^+CO\,.A);)(VP`_P!?4%<OK'PX[X?Z@['=FO<TQAV-D!H!U@_[
MM[0=K!!U'8!;_M>?M'H8>J8F9U7(GCQ\C\-!#K<XQ@N:WG2XZK(&]%&3XA_&
```

```
ML=C=*QII)W'2)&C:-I_>-72X?2)?[QQ8L;?"8"6YF09?$,K7'9IVINP^J[O4
MIH>A8V/C]-9%'XFK7I:'/+11!+O7U6O+KQ]WTF>UV#TSJ&*9'R]3<R1[K<V-
MC7 ^5EP_DML,&6W)$LV?XK VA&(`P GOL2N9!B]0R\>.>/JQ<7#4^'6:;=$-
M+FF[Y70QI\ITSH<G&,9 .B1EO8X?YNQ]"NGQYDF5*W@BO5(Y0&E%V0A:35<K
MQ_4\>')SI7>(Y^@F[8UA!O@5S]2%[,E<+JW3LK+RXVLD(AD&EU-V9OR0"+7+
MY>/*+*KZ!TJ'"C=/'D>-XG<Q!A9YM.YH^831QW\7YVL:HI>G1M(+=G#4003]
M%UOV6) 7.(8QHLE8V]2\:4MQ,<Y#;TF2RP#ZD%:DYYGBGM\>875IO9!]D4=T
M@)!!NO4+06!S+&EP/<<K:NWT'XMZGT=KXF2,GA=_W>2"]K:O\NXT\]O(+T^-
M_:+CN<UN;@.A!YEBDU@?\)%_J5\W):TT+/NK&.&FB:\E9U8S>97W7'FBRX!D
M8LS)X#Q)&;!_T1+MZ7PJ*2;$F;-CROBD:06O8:((7N.C_'Y\,1]6@=(YNPFQ
MP X[]VD@?8KI.Y6+QGT][^9,&VN)A_%'1\V1D4>:V.5YIL<S2PD^5_E_5=IP
M>S3J! =P;L'V6MC%F$<W2?-)W5E@[A)W2D H`T=U*[6FTFE%352FJT"TA,&D
M;TJ>A%DH.V"8<(BNZ(4-)%TF;LFU;);!* EW*!-A*;!2FU 2=E ZPDW*E%13
M6#P@2@104"*()*.DE$5::U15]$[03V34+M-=!20U!82NW<4Y=LE"J%HJ$;)B
M12!(/"BZ%5W4M"T"4#$H!R0H`TFJL+MU-5I/)0%-,/J5'4#_`/!^HZMF_A)=
M6W T%6K/U1C9.A]3:\.+?PDI.DT=FDJ6^ED]OD; 70Z1PQKCMZE>G_LV-=0Z
ML//'9_YUYG'#6X^6`#;2T"AY@E>D_LV&KJG5&@7>,W_SA8GVWU]/6?$?61T/
MHTF1&[_:GGPX&T=W'D[>0-JSH721T3HT&#;A+7BS@_\`BD#5]J 7(!_OSX^)
M\+7A]$B+'C:O'=8L@\[@[C_"%Z<D]UIC\/&_VA]&;/AQ]:@!,T-0SL V+"20
M\^QIOM2\=TCJ@@(QL@U'?R/YT_\`1?9!&W(9)CRL#XIF&.1M;.:117PWJ>%_
M=?4IL*2>.8PN`=)&;:=K%%9K4=/J'5@"Z.(`T:OS28?2Y,APR,S4&DVUFVX_
MHN9AY/X;-:^.-DSKIK'"S9\@._LOH?1N@]1ZBQD^?!^"Q7T0";D>.=AO0_S;
M[J*[OPQ"8.B;LTB64O:*KY0*''\EV0$K&-C8UC &L:T-:!V [*P!:9 >2("-;
MH@*:J!J-*4B IJAI4K=/2%;H%*-)J0* 6HIM]4>5`IW4W3$5PH J%X1!M2N5
M*0.WU5C0>/-5`IG,$K2PW3AIYKE9JN;+TX=8<^7,E#61O?#C!C@&M =1>3W)
M(^EJN;X@QNF P/;.#C/\(_,'%S.SP1L;V]=U7!"_J<DF(2P='QB&,:UA!GKD
M$GD`@\4NE_=?2Z _NGIU`!O_`,JP[?9<O&_?+3RW6NJ_"N<PQ/PI'O);_M6,
MP0RUO>]?H0N,P=*ZD1+%UN6:0R#Q8\UU3"/9I(>13B!5#8^B^@GIO3#_`/Q/
M3K[?[*SG[+R'Q'A=,ZCF^!CXC8YF@4Z/'#6.YW(Y/N!V6.^;)_;#?T\YA2?A
M^H-QWY1CP\@^'%.XUXA_P/TW7/LO2Q= ZB,QK=$7ABG$O>':`#5.'?R]5GR/
M[//]G=%!G0_.6E^N,@6/(B_,]E=TZ?JGPE"^/KN(9>F"F1]2@^?2-1KQ/WJM
MU;BQZJ_P\]?[DVSZ:STKJ6'AS2X`B;D.<2^!@V=M0<W?;V_DNKTSJ,?5.G-R
MXQ;R*EC;9T.YK^2NDRX?P$>;`'Y4,K;B=CT[4/Z>QW]%X1^1/%-*]CW1OF)<
M[0:+M][KO:O?<^%)/)Z-W6LN:5\6!C-F8-VR/;1TU=D$A;<+JT4[O"F;X,I_
M+\VH/V!^G(7C8.K=1Q7LRFES;<)"[3LZCN#_``WR%W.D9G1\X.Q)\2-D[F&G
MR `GS#3VKLL<?);?O_Z5Z2.1D[7.B.IH<6W5"PL;NHXT9E&1*R%T<A80X\CD
M'V(*X&9C9'1LEX8'1Z'.$<S77XC:[UP:YXW.RQ]-RH(LL/SX6Y&.[5XA>->D
M=MCOSY+IU\UERP\7K0[&ZA@F2B_')W+FEH\^Z#&&6 -QRW&BO8L8+/MY?JLF
M!TWI<KSU#I\SI(;K2Q]Q`_Y3P5HSNJ8G3PT9$G[1W#&BSZ+K+ZWI'Q-P+37!
M5T3F%H'?T3S8F1!S$9!_BA.H!4$@;U1]N%I5KM)-.->^Q2D:38(V[(M>0*O8
M^:#F-K\HO^$_T06$%[=3;%]BJA;2"001Z)HW-::)O]%8_BR+'\D"EQD::[\C
MS70Z1\0]1Z&9&8DX$4GYXGM#FGZ'CZ4N60/S"BKA4C/F^9)<2S7OL#^T*![1
M_>6!(#V=A_,/JUQO[%>GP.H8G5<=L^#.V9INVC9S:\V\A?%]1B.VP5A<Z0->
M-G--@CD'W6YW6;Q'VX>O*8D[+YKTCXYZCA@09S&YL+0`S6[0\#_,`;^J]/A?
M&O2<R:.*7Q<-[S0=.!X8/^<']2 M3J5F\UZ.ME :2M>)(Q)&YLD9X>PAS3[$
M(:K[JZSA]2FK9):A.W":+-2&I5T3P% T\5N@LU6%`2E#2#NK0UI"! #:<-L(
MAII0`AP-JII2RU"PE6'=0#T0U46FJ0I7\=DI'DIAJJ]U"Z@G+.4/#/DBEO9&
MTWA^B5S"`AI=2!=RHA1/;918-H$[!0M-)2TTI[5+M/INTE&T2ZF$N(#1RX[
M*:)Z(#BP..5QNI?$W3^G:@9!*\7LUP`^ZXXROB'XF<68<'X3$X$V1;&$>AJW
M<#A-61Z/.ZU@=.:733ASO\+'`FUYB;XGZMU>')BZ7AWANB>)I!&2T,#"7#7O
M1JUT>G_!F!CDR=3>>I3ZK&H%D;?^$'?Z_9=W/RH<7IF1).0V".%P#10!V--
MXLVLM>M?-O[XS,_X3QNFRQ018^'+(]KF,I\KGDDEY[UP%U/[,I WK^?=@?AV
MV:V_WC5PXY0WH9B\0%H?=#?<CG] NQ_9X:ZSU"CL<4<=_F:L<S&NKL=_X:EQ
M.F9O7(\[*@QLJ;+,C_'>&!X!>;%]K)KW6S-^+.B8!K\3^*/88U.'U-@+;F=,
MZ?U,L_'X<>06B@22"!Y6**; Z7T[I<GB8&#%CR?XQ;C]W$KIM8<2!W6OB262
M.=DO2NE4+;H+9IF\$ N'OOMPN[TWIF#TG"=AX6)&S'<07->W67'?<EUWR5JL
MDDDDD\V;1!130Z(+\"&&(GDQQ-:?N H?F-G<H6F!"@@!M%,`C2"#?W3 * >B
ML:U2K"4G#;3-:F#:"FKA0Q3PU:T;<(M6=:QG+*2Z2%K+04KFIY&,U(AJM+4`
MVE=3%=6AI5VG9+I33%9"%*W2@6CE-3%=;H9$;Y<:6%DCHW/:6ZVC<7Y*VK*A
MY0+!$R#'C@CL,C:&B_1/2@V4M%*X"MPN;'TF-O4Y<^>62>=Y!&J@&D':@/)=
M,I2 F2_:*G"[M*-C0K<%I!%@@[$)W;A9LC+@Q2QLC]4KS\D+!JD?[-[JZCB9
M/PX_%9DS= RA@R9!+I\:4ET$PN_4M//&WLO'SODQLUT&7T_(Q7:-0\5I#3?&
MD]QZKV.1G=3B<^>+*@="R6GQ-Q]4C&$T"X6/;8A<7,ZGF=3ECPF2Y'482\N\
M!F-X?%D;C<T#SZKS?-.>_P`-2XL^'.J93W_@\;(Q<?(D'[$SV [<6T-)(<2.
MPHVMV1\'Q3QRR_B2W*(MQ$+6Q?4#@;!>8Z@>HX,X_ X67C21L-L,39@]PW<"
M' 5\I&XO];6O\)+AP-AZOT*?\ ?^Y_%:`YW;\I)OE:G^V3N:7[]+9HHX<3+Q
MY),B:9DK6XK(OFVK?57(VMM+I?"F+$1+E^';V@-87@$LYL>A7(8_H,)(@^&?
MB#&R'MU0NBBUUY$;C4.-TG3_`(QGZ4^6+J6+*0YUL$W[)Q[6;'LDXDZ\C\/3
M]4Z6QIDZG@EF+GQ#49 2&/;>X<.._ERN9T-[<OK$L_4(I!G/^:,.;I:!0W ]
MEGS?B1_5,&1HZ>_P"X6]CR:'O7*QP9>3U/*BB:\.G?\`(TR/T_2UCON>4\3/
MV\BWQXJ,4SV^EVB<@D_[1CQS`\NH!WW_`.JJ&0_8EH(\P58R:-]]CZKU:AM&
M+-6F;P!_@D!</O\`^Z4X4U$L:'CL8W7^EI_#8\>:00N8;CD>T_PFDU%$D3HW
M5("#_$VD\;W"PX_*?/\`U6H9F0P5*R.=O!$@LE5N=A3.^>-^,?X#8^H5U54D
M0</DKV\U4"Z$_,"V^Q:MHP'D`X\C9V'UH_8K/-#-&X->UW'Y7?T0`M:\`Z2/
M4;I!<9^5Q(O<$4HTANUFO=6/:7-H$$_Q<_=05O\`FW:X[<A1LITEK@"A^TB=
MI=MY@[J\QLD8'!HXW(5%N%U7J'327869- V[TL=\I/JW@_4+UO3OCZ7P=&=@
MMR'79EA=X;A_PU1_1>'_`">M)P`YH<PTY66I9'USIW7^E=5(9B9C?'JS#,WP
MW?2]C]"NSX#XS4C'`UP0OA;'G6&R-W&X)WW7>Z5\6]7Z+/9R9L['(HP9,CG-
M`NSIN])]?T6IU^V+Q^GUD- Y")#1OI!7FL#X]Z)EQM.69L%QJQ(#(T'_`#-'
```

```
MZD+TF--#F8C<K%E9-CN-"2,VTE=)9?ISLL^P<+=VI #=/I -HCE,30V 4%&J
M")%J`5P@"-J4@=B@)4=QZH6@3L$601[H_9(2B"@:TDCJ:CJ5+C9LJ58&U(!]
M;)2:M4Y&1%BQZYWAC/,\J:UC5K%;I)IHX6ZII&QL'=YI>2ZA\:Q0R_A\.+QI
M'6&@[DGT"JCZ%USK#C)UC+=@QG<1AWB2.Y]:;]=_19\E\70ZE\78&&XQ8[A/
M*=FU?/H.ZYGX7XFZ^\-G<_IV*=]<PW^C-C]P%WNE]$Z;TE@&/C-?/S^(G ?+
M]'5M]%T7/+G$DV>]J*Y.#\+]*P6L?)%^,RV[F?(^8$^88=F_^MUV"XNJSL!0
M] D+E Y$6$[%>*^,L[(SNIXWP_A_,]SVZFL(LR&P`?8&^:7J.I=1;TOILV:Z
M/7X=!K+_`#.)V"\U\%X;WC+^(\AYDG>)(X0[OL"7WYV-*E:G[>> `Z2-(V+N
MWU77_L_ ;UCJ' _V<=OXFKE%NCI3&^1 _1=7X%.GJN:>QBH_<+$^V_P]\#2(
M<J]2EK;FNL>:EJG4FU**N!M.*OE4!Q]E8THJ\!6-:JXR5>U35'0F`V3"BI0Y
MM35P`*3AJ4IFE2K#-"8-"%;IV[K%:B-:B8[5@"8!9U<9S&E$>_"U%NZ&BBKY
M&,VC9(YJU.8JW,*LJ8STE*L>*59W6F02D[*.-)"Y:0X)1O=564=2(>TA=NIJ
M*4H)R:"Q"<9<A./J:R.VNR',JO,-[_4+7L00=QY%99VQS2-P_P#NQ&7/:TU0
M.P_J?HK48Y?&=CNQ^D0R1%[2X9.1%; 0;+2V3<@UR-MUYGI&3%@YLK^I]4D@
MC@)ECB9(6OD=>DAH&Y!VX7NP* ]!6_DLWX##&6<L8\1R*H2%MD>U\+%XVRKO
MIPL7HKNK%W4^KQY$.3-/X@@UD%L8;I#2>=ZLC9=//S^E@.@SY'-UFM$N)(;/
M'RVW?GLMTKB&/>2;`)NZ[>:XG1<6>60]0R,F:9KA^P$DA<-/GOQPM7?J) _'
M28>,T=%Z=E9<SF%OXB2%\&@W0-N%$>@KA.?[WZKX/]X86,R-GR2P9+69#)>#
MK:2#H/.WHNR7$\[I3Y=DG):^==7Z;A/ZN<3IS6Q-B!,\F.7!H=9&FG;6-N*"
MP=*Z+UC.R(9,*69K"?FR)64R.C1W/)'D-U[/$Z=$WX@R'0X_X>(W(':2YKS=
M$4>QW^RZ_3NGP]+PFXD.KPVN<X:O,DG^JS.-NU?)\)U.:?ZJP3D\[C^):G0-
M.U*I^.#PM@,E;V+FGTX5S)G_`.('ZK*<<CA*6N:4'0_$,KYFD>X3C1(W:BN
M:V5[4S91W%'S!0;3C@&VDM=YA6,GRH10>)&\5)NLK)B/RO'_`!*QN01^9M^K
M=T&@SXLE">!T9\X@$(\6.5Y,&0QS3PUU@_;A5A\3QS]U'P,=[=DU!R,*?';J
M>US0>#R#]ECL@@C8#G3PM31-%(UT<AMIL6K7Y8E=>5C-<:_,S8IJLI_:-!%7
MP!?^J5I=&[<$!;&Q8DC08,@QR'ELE4?_`%[(28\K`0^.V^8W'Z*FL[B'[M_D
ME#ZH.)J_=%\;6D%AKW_U3,+9-I&;CN$"`.:[4PFO0K3!GY6([5BY$^+*=R^"
M1T;OT(M4.8Z,VS=GHF86/8:%%!['HO\`:'E8SX\?K'^U8H!U3-8/'![;V 1]
M%[+ ^)>B]4D;%B=0C\5W$4K3&[]17V*^,418<&EJ?26@%I:6G]U:G5C%XE?>
M'M?&2'M+3ZH7]U\;Z=\1=6Z.PLZ?FRPL[Q&GM'L'`@?1>IZ1_:&Q[3'UC%<Z
M0<38H )]VD@>7"U.XS>*]UJW36!NN5A]>Z5G1M=%U"!KG':.9XCD_P"4_P!+
M6U[ZY/"UK.+2Y OONJ'.HTE+K4TQH+Z2ZPJ-?<\+GYW6\'!'[24/=_A804U7
M4+S8`W63,ZCC8%_B9@T@?E LKRA^(>K];D,/1\5QC.QD:VF#W>;"T8OP?'(-
M?6LEV3+SX4#M,?U-:C^BSOZ7/V$_Q7D]1G_!=%QWRR_PCYAZDD@#]%7!\*YV
M=,Z3KF:YK+OP<=]O)\BX[#Z6O4010XF,W'QX60P-_*R,4/\`JGM1=_3/AX.)
MTV'P\'&C@!'S.:/F>?-SN25=9/*(*@*(&Z%E6#=.`T]DPU1:(5CF`G9<[K/4
M6]'Z9+E@M,P^6)KOWG7Y>03,77F?B2>;K_7,;H."\ -<0\G:GB]1]@`O62P1
M8O2IH,9NB&#'>UC?(:3_`-5Y[X*Z28L67J^2#^)R[;&'?^%8.KW)'V7ILL7T
M_+'_`-B3_P`J3Z6_;YN\ZNFQF^3?Z+I_!'_U+,]6'^;5QVQN;TYA=+(;K;:A
MM[+K? [9/[TRB2TL\-U[;WJ;2YQT_#W-D%'6E*@6W/5@*(2 CZIP0?-15C3:
MM:J6FDX<JC0QRO:_@K$';JP.I196YKP4VNO98VO5P>"%,:E7%W=1IW5!>BQU
ME3%UL:20K&BEG8^@KV.M<[&XO:+5NG951G<*\;KG6X0M-*%NRLK9$A35Q06V
MJ9."M+MNRRS'D+49K,\[JLE,\[JIY76.=*YR0FU"4IV]UID0:1)59-*7=%7$
M/=%"TMH7N@-WSLJ<6$QRY,KK#I92:NQI&S?TI6W1]?1$DH&M*3NA?\D"51'-
M#FEIW#A1'HEH"@!0`H <!$FTI1![%+O:BS9SHABO\=\C83L\L'_0TE]042]8
MQH6O<X2.:UP:7M;M?DM.)F0YL'C0EQ:#1#A1!\BO,]2FQ\B&$X4;XWPN.B*1
MEM?WU"KM5PY_]SSRC&%XDCM;(WBCJ+0/Z+SWY[.O?TUX^GSIN0]H&]A6C*::
MU-(^JR4:Y4LKL-[71/'Y@/<HNB#AMN%@M.V5[>''[H+W8X*I=BD>R=N2\'Y@
M#]%:W(C=^844T8W0N:?1*"]AXX71_9OX<TI70-=>RNC$)B2=0OW"L;* 1I<X
M>G*=V-MPJG8[JX*#4V=PYTO'H4XG8[9WRGU"YQ8]I[E'Q7#F]O-!TBQCQV-^
M12"-\?\`NGN:5D9,TCNT^A5S9W#B0'WV0:3E3'_?QB4`5ZI1^$E<!;L=W\0L
M)!.T@ZFD?JF_92;VT_5!:[#>1<;FR@'\T;K/V6-[',D.IA)'N#]5>(RSYHWN
M8?-I3C)R`?V@9./XVB_N@I:62"B-)[6>4 R2,;:7-/9:"_"FV?"_'=YMLA X
MQ<0V":.5A/(<`1]"J,[]#@"PD'ONEU!Q`/([A6S8LL)M[".Y']56&M>*<XZ
M_+2@</=ITN-CM:]+B?'W5H)-><V+.BJ@'M$3A_Q-'\P5YDL?&SY6AX'I16AF
M/CNA:69'[=Q \/0?E^]7Y)N&:^F=)^)>F]7C);*W&E!(,,[P#[@]PJNH_$^!
M@ C7XKOX2 /NOGV1+%@/=CX>L.NGS/:6%WIIK;[[K-CY4N/DLG.A\C3;?&C$
MC?\`E((5\F?'V]BW)Z]\1N+,:!V+B.XGG&B,M]-OF_5;^G_!V!"3)U%YZA.#
M;2X%C&^FD'?Z_9<[$^/@X0PYW3RQH%&:"38>NBOT!7I\7J>#G!IQLV":]@T/
M`=_RG=7TEV-O[H&VEHH-`V ]%$IU-):001V*!)59.2$#22RA90.:4 "6U 5!
M8*"8%5ZD;5%H&H@#DKP76B[XL^*H>D8S]&- '-DE.[11MSOK0 7HOB7JK>E=
M$FD$FC(F:60;[_Q$>P6/X-Z:_!Z0_+R(M.3FN#[=NX1<M'ULGZJ5J?MZ.FM:
MUK&Z6-:&L;? ' 54XO&G%7JB>/\`\2K"=]C]%5.0,:=QV B>7'TTE$GV^:OD
M9_=\0#V V>X\EU?@<@]0RJ(-,<"?+<+ESPL9TV+Y1N7=A:^@='CCAZ+A-CC8
MP/QXW.#6@62T&SYE8DUTMQKK=2B!Z)ZV4]UIS)PF!OA"M_1'A >#RG#MD@I$
M(JUI3!RJ!1!W07AU)P_=9PXI@3YJ*NUV58QZS:J3M=NHL;&OK:UHC*PL>M#)
M/58L;E;6NW&ZN;)QNL3'V5:U_%KG8W*WM=81NEG;* .5#*?HL8WIY7>2RO-W
M:=S[5$C^RU(S:HD.ZI<[962.5!)7:.5%*0H#LB54(4$7(*HBA)4)4M40;*($
MJ#= 2D)3%(41"4+4/F@:M4)-*(8W2$.+6BR&BR?98H89,N894^IK:_91':AY
MGU6XH7OONI8/,];R_P`?.((_&+F/`#30W\Q6ZJZCB9F+AO&7BC.QQ\T<L>SH
M7>M#CGDTNMCXK.FPRY61I?(YQ<2X@5?8+ )>I]4UAA=%!I(+2[0VO(^?*\MY
MR[U]UI\L)OM2/T2W2-[KT"$*:4;4" 44-T]V.$*V0#41Q8/NG;.]O[Q^J2K4
MT_9!I;E_XFA6MFB<.2"L%&]D+M!TC&UU$;JI^,"#LL@>1P2/97,RI&C??W0!
M^-7"I=$YNRV-RV$?,VBK&NB?P1]E='.#I&&N$PF%'4T7Z+<^`'L%2[&!34(R
M<CB0CWW5S<AQ_<#@.X*SNQG ;*LM>SLBN@V6-YJP#Y$*&!KOF!H^8*P-F<W\
MP!]Q:=D[;Y<T_P`)0=%DF5"*$ID;_AD&H)73QOH38K6^;HMOT5#,EWFUP^RM
M_$,((<TB_1/8L#,=[1^'R&EQ_<D^4_?A5S8<T48E?'H%`WJ%?>T=,4G9KD6-
MEA=JAEDCKR<FBC4U[0U]7YDHEQC&DTX=@>WZK0<B1VT^/#+?+]-.^ZG^PNO]
MI-$[L)&AS;]QNJ,CM0CNR&GL=T&/<'!S39'%K4>GSEID@T2M/)C=O]CNJ' `
```

```
MZ)(]+QW+2"@[G2OBS/PIFB65^3"=C',\NK_*39;_`"7JNG_%W2\TLCG,N)*]
MP:UKQK:22 /F`]>X7S9S-MQ;?/NF:W;Y2YS?(\IJ61]E<U[#3VD>26U\FPNI
M9_3_`/Y/+FB;=N:UY /N.#]5Z;IWQQ.Z5D74HH# -C/$PA[?4M%@_0!76?%[
M.T-2SX'4,'JK7.P,N*<-_, 2UP]PX K2&BU64U)P=ZV'NE(KLN!\7=5=TSI/
MAQFILFV;;D,KYB/N$61R)'.^*?C$0UKZ=AO)??&@>A_Q$5]5[AQ%W5#@#L!Y
M+B_"_2V],Z)"7-TY62!+/QW_`"MOT:?NNSV0J JC/!=TK.:"1KQWLL>HK^JO
MV6?J3"_HG4FM-/.,_1Z'LA'SI\ADZ=$XBAO6Z^B]-%=)P-__`-K%_P"0+YOF
M'Y(\6(6\G2T>I-#^B^F8T1QL3&@=S%"R,^X:`?Y+/+72ZT+[(%2]EID;1&Z%
MJ7N5`0B"APH#:*<'=,#LDONB#:@8)K2 HVBFM,"JP4;06M?NKFO.RR@[JYKJ
M`6:K6Q]%6B18@_U3B3A9QN5N$J/B[K'XGJAXGJL^*ZUNFI4NDN_)4%]GE NV
M6L33.?92$H$_=(3RM,G!1)55J%VW*J&)0)V2ZCNE+J1#WNCJ537)M2IIU":2
M!P-[H6@>U";2DUV"A*"$[)3Q:!V40#D(>2*'*J*YH(YVALC=30;KL3ZI)622
M$Q-+&1.;3B!9\J'DKR@I@^$T5""/9,+[(TLMDM'LF+0>Z4MV0"]T>%-)I#=
M>R(/GPE[(('42G;LH@-=D-/JCW4NT (*EE&T3ORJ&CF?'^5QI6C+=PX`CS6<
M@(:2>^Z#<W(B=S;3ZJP,9(+&_LN;N"/12][O=0;78P/DJ7XGH@S)D;RZQY%7
M#+:=G-^Q31D,+F^:#7R1["PN@)(GU\P'H5'0M>15&_5481-O\S1_)7MR3V>?
M^+A%^(#V5+L9P&R#4W)<-G-#O\JL\2*38T#Y'9<TQO!X1$KV[.W'D0F#H''8
M7!["6GL05<<C+;%H+V3,K\LC=2YK9P#;::?0K0S)<1^9KO?8H8O#L4BI<>2-
MWG&;'V)3QX;90/PV5";_`''.HGZ*IN0TFG,+1Z[A$QPS#;2?JFBN:![?]] ]
MF^Q((!^JJ8X:J)#1YD[%:X_Q&./V$Q:/)PU#]4QEC>"<C#U./+XGD'[<(,NM
M\;V2L<=;#J8]IW'L5Z'#^-^LZJE,&70_+,T,/W;7ZKB,A@D&F++\,D[,G:&_
MJA-A3-&HQES?-NX^XV5U+)?M]#P?BK!RLJ'#R<?+PLF0@5-'\ALT*/(^H7#Z
M:/\`M;\5OSYFN;AXFF1K"-K!&EO\R?9>3&1+'"<5LCF1'>B=K]/+OQYK5@=6
MSNE$NZ?._&)%.+#J:[W!L%73Q?6W$N<7.Y/*%6O(X7QYCNC:S.Q)&N8T!\T#
M@X./GI-5[ E>AP^K=-SX@_'SH"X[^$YX:_\`Y3O]K36,L;-RO/?%&76.,-CB
MP@"9SAS>X _FO0.?&R,R2/ C`LN[4OFW7>HR9<TDLGYY':B/+:@/L$M:YC9\
M)80ZCUU^7,+9A 2"O_$OY/Y./T"]\3J))Y)M>8^"A)!C]2P)X3%D8TS2]KA3
MB'-VOVTG[KU%)$ONE]U.](]E""41*V44\U#P@-]E`2@H@-I@2$BG=13ZN$UV
MD[* V@=&R D)I&_JBGM$.M5E2Z06ZJ3A_"IOA&U%7>(?10/]53:@*8:N#J1+
MU2"B'6F&K;V2W:6[0O9 Q-!*#L@380M5#$]TI-I2:*EWW1# J60EM2T#6C:2
MU+0/:(-I!:@**>^R'"'"A* V@5"?LA=H"H1LA_-0H/AP;:!"O\-U?E^Q2%I!
MX6&U5$(UZ*S2>Z!9LJ*_12O1,6H$(@``V@6A'T4K9 I:4*KLG!4/L@2RH$Y
M0TW=*@*$[J%GJI1[()RC:50']4#78*FU(6I800!0A3G9&P4"[WNG;(]O#R/J
MA=J4/)-%S,MX_-3OHKFY,3OS#3[K&6J4H-X$3N'-*1^,#>RQ61Z%6LR'M/)/
MH50S\4=@JG0/;Q96EN7?YV;>BL$T+QS108 Z1GF F;/7YF_;;^2WNA:X6*(5
M#\45Y( S*(.TA'H[=7LRK(U,!]6FZ^BQNQ'#\MI#')'NF0=$NQY=CIOU"=K9
M(MX)GL/H[9<L3/'YF@CUW5L>0 1I+A[';[(.AXDHVR,>'(9W^4,/W"5K,1UZ
M)'8W\#V%X/U"K;ENL#Y7_H4_XB([2#23_B":(_"DHN@TS-&YT/!U?3D*D0O#
M@75$X'9LC@T@^E[K0,>,G7&\M/9S#2M$N0T`2"+):!L)V:J'NFGMVH>I=2GP
M9<)\YR@YO[-A#6FP0:U 6=KV[[+F80QIOB3%'4)FQ0!X>2_9KZW#3Y D59V5
M#<Y@<"Z*3'(_*]CM0!]J5LN/#U&:.6/(8\@TX-%&O\II)]CV4C_P7QV<Z3(8
M[%ZU!X<;F.#FF9ND#<6+-?\`Y+ON!:2""",+XYD1O%,:^4-B=JCUC21MSZ<
M+TO1?C>3$B9C=2C,\3!390:>T =[_-^AV[K6LWE[X;*<A<[$^(>D=0;_`+/G
M1AX;J='*"QS=K/YJ!X[+ID:2B$%^2/U1`O=0[(A4>P1]5%%"D$WL@16R"?R4
M')4I2D$!YW1M"CY(TBCW4M!$HB IOJDOLC>Q443^B(-)>41NJ#:(*50%`]J6
MEO90% W(0*%TI: %#V1[H(B7ZH[H*!!/1%!%!+[*6@4+I%66H2D!W1M PX02
MZN44!"A.Z4FE+0?(:KCLCI![)@+1`/'9<W10]@H_*+[;+-"!3WNL@&@%ND'R
MJB"/5 3WUJH0B,;&Q]$/`U[L(*Z$P:QVET#W-K\S`J#%BOKYBUWD[;^:*QF-
MP[)"T^RZ!QG@7'('#T-JMT4H_-'?KPFHQ57NA7W6DM83\S7-*4Q _E>+]U11
M2%65:8W-_=/T"4BB!1^R!0AQ2<BDM;<(@4#LII")"G;U0+HWY0H@IR/)2R.0
M@KL]T+5NQ%D(:04"WMW4!1TE*01V*H-GLC=\\I3L.]HW]T4VR@`2WM2(/*(F
MDBZX4(/-*7N$0;Y14:]S>'$?57-RGMJZ=[JH44"VU!J;E1NY!'LK`Z*0;."P
MZ=O5#<<(C:_':19 I4/Q-]E6S(D8-B:5PS'53@#[(,[L>1G'\T-<C#Y>=+<V
M>)_-@^J8Q,>-B#]5=&(9(X(#3YMV*T,RW "GV#_C4?BM(.U*AV*6GY4]#>W(
M!%N8:\QN% ,>;=I%^U%<LMD9ONF_$N-![;]P@Z[7Y$0IDI<S_P`.3YF_8I7N
M@E(_$XFBOWL?8?\`*?Z+#'EZ1\KBW]5>W*<X;AKAZ;%%`XL4Y+(<D.H[,>=)
M_7;]5OQ^J]?Z.YKFSY C;_W;WE\9^AL+%JBDV<"W_-LK(728I+\:5S/8V/L4
MU'KNF_V@1S!_]Z8A:XDEKL1H#0-MBTGWX*]-T[J>#U:.23 RXYA&+>-VEH]0
MX KY9).9G:LC%A>X\R1VUWVX_15NAPI"!'--"_\`^^T5]"%=3'V$\TA2\)A?
M%'6\,11R^'U#'8 "0 XAOHYM'CSM>GP?B?I.<*=D#$D'YF9)#=_0\$?95,=4
M;)?1%KFR,:^-S7L<+:YAL.'F".45$!3R1[(ULB@.2HI2@00UYJ>:B-H%.R("
ME(H!2B*E;(!2-TIW1 W0!3E-5H4HI0$3V4I15 [HVH@@E;[*?51#:T!4)V0*
MG&Z"']4#:EH$H)=%2[0NE$$NBG!V2<H@[*+!O=2Z2DH'E$?*GN?$?VD3Q?[S
M1J"#96.</G'L=EB$V1!;7.&EW%D.I;OP^(_$QIG9P=DR.<'QEH'ABQ7]5SW/
MMUS1<W4-DF,RHF"C9<4)8V1B3PI7. `IPV\_):,9H(@!W-65?PF>VMU!Y%[A
M%S0^FD"O)89X6G(>\/(<3R#20#):?ER'?\0!5RIL:W8,!^8-IW8M)2'%G'^[
MR=O)[056W+R(P-40D\R#289[`#XC7Q;]VVF4V*<J9^*S5D1,>WS8ZOZ)C#$]
M@)B<#Z"UEZKE0SXP$<C7;]BM6=D2XDK!& 06[@_1!7^#``T2AI\C_H4C\64"
MB ]#^]&2$-FQ2T?PNM:&9>&X`"4L(\["71A='H_-$YI]$F@$_G'L=EUVALH&
MF6.3R&Q2NQV.%/@;[@H.3X;ZXV]$I91WV]]ETG8D7[KG,]**J=BR5\LC)/J#
M:##I0+=UJ=!(TT['('FTJMT;!R7-]VVJ* -D+-TKO#-?*6N]BE,9&Y:X?1$)
M:EHD"^UH$'R_1!-J4H.[*<;4I6_H@4L-H40G!W4Y0+9I"]PGV(JD*'L@`/W1
MM33W"%$(&!^RETELJ7N@:K*!:A=<(DE%#20A9&R8FU.40[<F1E;V/(JX9;;&
MIOU!66@4"V^$&\2PR=P#Z[(/@:1M1ORW6 @A.V61G#G#ZHJU^)9-']%2Z![>
M#=*UF4]O-'W5K<F-Q^8:5490^2/:C]$S9VW=4?.Z6LF%_P"5P2/Q6'@#W02/
M+/!=?OLM`R&NW<PT>XW"P.Q7-XL)!XL1L:O<;(.H(L=[P]C@U_((-&UH,F6Y
MH;)(R>,<-D;_`%Y7%&0X.&H7[C^JTQYW82/8/^8?JH/28/Q+E]-T,8V5F.+U
M1;2L/WHC[KTN'\78&6 )0(G'_"^S]6FB/U7S^/.'!T/V[.H_8JQSL64?M&AI
M_B%*ZF1]59E8\D39&SQAKKK4X-.QKNB,B$@_MX=MS^U;Q]U\NJ1S-,60XL_P
```

```
MOJ1OV=?JGBDB@&G+Z6S);5:HI71'[ U^B:8^IWJ:UP-M(MI'!'H@05XCHWQ0
MS'Z@V%SIOP!V$<KK,0HT`:X%!>TQ\S$R_P#Y7*AF'\#P?T5192 ![[JPM+>0
M1[A"O6T"TI2**!:1I$A1! FTI0$[5%@4@1NK/)0@**J(2D*PMW0+54)6R%)Z
M0JD"T@F]T-D0I'"A1-E!4P#OM2!&R:D*0+Z]U$U>J%=T"J6C7*'=`#O:G9&E
M*0?',;"=D-<]Q+6#N%IQ8&L&1&XV: %A+CR%D8!U5Y*_&&HS$\N7*[CK#_@V
MLBU6ZZ[%:(0UL\;0-@SA!H=X+@>PV38^^6W<;,K]%:D^E<@N5Q]4I%]U:X D
M^Z0#;S6V"D6/18L\U$[V6\MV[A8>H#]D?HJ.01\[`!N2%V.M[9; "13+Y]2N
M;"S7G8[?X@?U73ZT"<YO;Y!_,J?E7+^:MS?NB3YL!1+5"?)4`%HW!+#YC9:(
M\O)CW$[G#R?NJ'"PEK?_`$4P=%O59FGYH6.]`2/]5='U/%=_O8C%Z\_R7)-M
MW!-(QVZR2F&NY%-!*[]CD!]]B?Z*UT)<3J:QWN%YHMIQW3,EFBWCE>WV=2F+
MKM.PXW\PEI_A-_R57X5M_).Z_)RQQ]6RH_S%KQ_&/]%KBZHV0@R0F^^DV/U4
MRB28<PX8R3Z+.82/SQO9[&UTHIX,A[FQM<' 71;160Y&1$]PUZA>P>"GL9M$
M;MFR"_4(&"0&@/LMGXO4/VV.TCS:$-6$ZZ,D?L$&%S0WG8^JFA=!L(=_NIP[
MT=_()7XDH_/ QWJW9-7[8-*A81V6IT(8;(D!\CN@8C?^B(RTH0KG1D)=-*^Q
M704TA/I0`0PA8AI("MK[H'A!5N$.%<:)]$I:$16C=442SBE-)" 7:)%H4B-D
M5"T%#0?-.U.!NB*""%VOA;!9U3KN%@Y#W^#,XM=H=1_*3Z^2Y4P_9E>B^!6W
M\4]+-G\[O_(Y"K.O]%BZ7U,8T$[G,,;7CQW NLD[; >7DN2_&>'OC<RRT;Z?
MF7KOBEU]<(#K?^&'REPV%E<)\@8XL+B6Z@'6YU[_`$6.NK*[\\<WF5QC`QYK
MCT5+\.CL2%Z-U2.VAC=$2!NPDJ@X,<GS:7MLFA$-OK:L[_:7X;^'GG02,%J-
MFECVLZ?*['V79DPI`+!:0!?S&BLDL!%ZFUM9(W5\M<[QU&5N;O;6Z?\`_,EI
M6IO4?EHOLUP\;_<+!+$TBV\(PP<EWI2TRWLFL!SF\NV(/9;H8HB0<7(DCD&]
MQ.TE8&1>/D8^+" )'N:RSM\Q-<A=S_L9\2LE\,XF/,S_`,4SL+?N2#^B8;'7
M^'<WK$O4XL5V>Z6!Q+W^,"XAH&X&_I^J]KQQPO,_#'PWF])SY<K-FA>3"61L
MBD<[2219W [+T]7O]J2)2TA2:N5**('*(&_%HZ;3!J*0!.!28,'9,1LIK6*^
M] *#R3$)FC=34(1LE(X5I&Z4B[X3140@=E86H:;!\U=%=(&O/=/I0JT0E%"E
M86[)2%0M()CNC7FJA%"$U*4@K([(5]U80A5\(*Z4(V3%J!"#Y)!*TL #201[
M*"8Q9)C ;N+Y6^)I:VJ5@B:'%VD:B*M<ZZ.?+EL:*+'7Y@[+;AN+\B]P- 63
M.'[>( <E;\<7E3N\A7*!*[6ETGCR5A'?LE %<K;)2VALN=U'=A!\PNFX76RY
M?4.0/4HC-@QAW5\9O:UMZP/]NY_<"HZ6+ZYC^@)_0J[K%GJ4HO@-'Z!3\JYY
M%TIIK[IF@UNI6]*H!'9(!OZIW"]D0-^44C^$8!\I)4DX(1C_`"E!4:).W=*X
M*RNR5PH<JHD3-3N5:(W-=8(*3'&_T6BOT45LZ7\V3+J'$6]>ZV-FA> '$ <4
M[99>DC]OD^0C"MJR32F:LJW\/CS&PT>[3_HE=@1NH F_H54Z%CC="T'/EA9;
M)75Y'?\`FIAL52=/+#L`0/(TJ0V6)Q#'.;6^YV5D'4)9GAKF-/:[6E[0''V3
M;/M<5033R2MCD<'-(-C3Z*%NY &]I\9O^V #_"?Y%.=))TD<[T;4%)80$CH@
MX_,!:T:=JY0+1R$TQE="*VM(8" ./NM>@TE+;\TT8S&0=Q2732W:>R0L'<6J
M,=($+881^[LJW0$\$(C/IV"-*PQ$78*&FD"$`J"($>2?3M=)FM5%/AD;\HC4
M#N#7LKB+8[GCNG:W9NW9$9W@/C<-K79^%LZ#I?5<+-R6R&&$DNT"SNT@;7ZK
MCY; UE@+1CC_`&-IJ]O)*KU'Q!U"#,ZLS(Q<@/A=C-HM<!O9L$<@^BY+Y `;
M>S5Y:US]5N '*T#,D;L"77L=SLL=3;KOQU),:BTEX.EAD!!!&HB_NHUCGY#0
MZ,"0V0[0:X\U6S):ZVD4TD$V22F#O$:"8]3+H4TK#IN_2T/!II8\/ -OT"C[
M)VN^4M:"UP91-M!<L^D-:-(-T>&W]>5/Q!C8XNEY80/D`T[\HM#(CBR;\41B
M1H'[X%KD3!L#OEX!H"[6N;J380YK9WRD@ .H`#9<YC3/*7O.W-KKS+'G^3J7
MZ=KX:Q'Y/5,<L9KE,K= NN/F)^P*^M$@O)\_1>#^!,%T_4']0;7@X@T-Y^9[
M@1M[`W]5[SVI;<1 ![(@( TB#NH)6Z@;141%**%;[IPQ$4K-J6;5D(&@<J4B
MXJ=E%$-'=0BN% ;1[**2KW0TIJW1K94)I4+=E8$P;::F*/#2^'NM@CM Q>B>
M2^+(6$C9)H6WPZ*GA7V5G2>+%X:4LWV6[PDKHZ"OD>+$6D*<*]S%66TKK.*Z
M0I,4%4+26J_DG*4C=!\O9D8X/YP/\VW\UI8^-^S7M/D`;2^#$X"VC?S"5V%
M>&T?,!8]-DR<<NR(`>3E=CM_W[QS9K]%DAB,74HVB230-])*W0C3CR$;V;4"
M'@C]$@&U>2=U``E**%&]O9;9*1N/JN1G_P"]:/===]W=<!<C-WF8B#T??KL=
MCACOY'_5-U4ZNI3DC>P/T"G0Z/6WGN(W$?H$O4"'9TY[:D_*LW*!'")%=T.5
M0O?NB H3O0Y4"!7C;E-&/V92O #>=T[!^Q)]$%/=*X;(^_*5W!5%N..=NRT!
M4P; JZ[[H8W]'%G-)[,:/YJP5:'1A4.>?(-%_0H_503959(J*P>ZM[*G*(\+
ME!BZ<RYF^7_5=9[1J=OV7.Z8W]JT]K75>VWN[U2Q?M9]*,=E9A<.S2KSC1'?
M0WZ"BIC,!GD/DT_T5[6[:;J:L978E662.:?O_-(8)F;@MD^FG_5;Z]$*`":.
M=4O[\+F^HW_DE+V76JO?9=(-V [I71,=LYH</4)HPAM]T*WHK4_#C=^74S_(
M:2'$>T"I23_$+31GT4AHV5CHYV&O##QYM-?H4#(V/_>-<PGL1_5%]*]-'C=0
ML!Y ^RM;I>+!L>BA;0[^:NF,YA:?^A2^`X73MO(A:]/933O934QC(>V[9L?+
M=%CFT 37NM+FVTHAC7-%B_HJF,V1$)(2`;-;4HT>%TH2>31_,(Y<0CB+H_E/
M\.R:5NGH1-G=@Y_S!4869C20'#37=HM7-R(J(#Q9&]FK7*%UW 1L5RKB^3KM
M<VM0< 1SL@[.;&14I)'&ZY6IU4"=_5#NIXP\[^&^7J4CA^S;H%5:RND>\VYQ
M)KND: 7#42!Z+=!%C%XTOUGR<%?4-O3*R-S]FM<X]B M6/BRFS([2UO8=UM;
M(-(U!K?5K1_1'6UHKB^"-EF]5J<1[KX##8^A9#6;`9;CL?X&+TR\S\#DGHV4
M:('XHD?\C5Z;S6I].?7V*EH5V4"(8%$'S2J [% X)5@/FJE+[J8NG)M0D@;)
M+"<&_9,-$6CWY44(W4Q3`VY/5TD`3!VRF&F#0G: %6T[IPY,65:"`FV/NLQ?
M2L:^]U+RU.EN@):[)FO%)'NHK.&FH4JWM!1UVE+E<-5N:J'!7N.WHJB;'JM1
7FJ7,]%66TKR0D<%K6;%*4IR*2E5'_]FW
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

33. [wxsig] Picture of Wx station at Hamfest

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 07 May 2000 22:36:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Cc: dan.awtrey@dalsemi.com, Lloyd Plush <lgplush@csi.com>,
        Norm Miller <nmillerN0ENN@worldnet.att.net>,
        Phil Pearsall <pearsall@msn.com>
Message-ID: <LYR15067-82404-2000.05.07-23.39.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is the wx station set-up at the Pike's Peak Hamfest near Colorado
Springs. There was a second homemade radiation shield on the table to
the right of this picture.

Russ
kb0tvj
[Attachment: hamfest2.JPG; image/jpeg; 62,773 bytes]

34. [wxsig] Re: Running a quart low...

From: "Aaron" <ae4ko@amsat.org>
Date: Mon, 8 May 2000 10:16:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82470-2000.05.08-09.15.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Aaron:
>
> Have you done any work on the sensors? The fact that it is every
> fifth LED flash means that something is dying regularly.

Yep. Although it just started that. It was "random" at first. I have
done nothing to the sensors as of yet. (not even replaced the temp
sensor...) Looks like I might have to get inside it to have a look
around.

> If you run a calibration does it go smoothly?

haven't tried recently. I'll have to bring the unit down to look at it,
so I'll do this again as well.

> If you have a pretty decent silly-scope, you should see a long gap
> (3+ seconds) in the 1-Wire traffic. After that you should see a
> single burst of data, 800ms of silence, and then data bursting
> every 100ms seven times. Of that group of seven bursts, each
> should last less than 20ms. In that group of seven, I suspect one
> of the groups of bursts is lasting longer than 100ms and causing
> the LED to stay on longer. Can you tell which one it is?

I'll have to see if I can get the scope to record that long. I only have
4k points to work with.

>
> BTW: Have you tried hooking this up to the DS9097 on your PC to
> confirm that this problem is with the T238 and not the PC too?

Not for any length of time -- just long enought to verify that all the
directions work. I'll re-configure the software tonight and do some
logging.

>
> will
>

(Random Quote)
I'd rather learn from somebody *else's* mistakes!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

35. [wxsig] Rain Data

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 8 May 2000 21:19:16 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82619-2000.05.08-22.45.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

As luck would have it, we have had a nice drizzle all day today, the day
after I installed my rain guage! We've had 0.31 inches so far today. It

was neat to see the data on wx.findu.com as well as my TH-D7A while driving
home from work. Of course for us colorado folk, 0.31 inches is a lot of
rain, so seeing the tiny dimple on wx.findu.com for our "monsoon" kind of
busted the ego a bit. Oh well :-) Based on the graphing data, I can say
that I'm a fan of the rain-since-midnight format. having both is nice
though.

Russ: Nice table setup! I think it was neat (and brave) that you let folk
play with the sensors.

All: Bob Bruninga answered my email regading no station identifier for
embedded APRS stations like this one. He basically asked what identifier I
would like, accepting my 'e' for embedded and also suggesting 'a' or 'A'
for autonomous and hinting 'e' may be good for experimental. I'm open to
suggestions here. I don't want to be too specific so that the identifer
will be only for this weather station. After this single-character
identifier of the weather station "type" is a four-character specific
station model field. Embedded seemed a nice general term that could
encompass any stations like this no matter what the micro or bus topology,
we maybe should just choose a different character. After that I'm torn
between leaving it "1w" or maybe chaning it to T238. Opinions?

Aaron: Hopefully you will find something weird between the later packets
or the DU9097 adapter board... Your problem is pretty stumping!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

36. [wxsig] RE: Rain Data

From: "Steven R. Bible" <steveb@dandin.com>
Date: Tue, 9 May 2000 10:39:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82727-2000.05.09-09.40.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> All: Bob Bruninga answered my email regading no station identifier for
> embedded APRS stations like this one. He basically asked what
> identifier I
> would like, accepting my 'e' for embedded and also suggesting 'a' or 'A'
> for autonomous and hinting 'e' may be good for experimental. I'm open to
> suggestions here. I don't want to be too specific so that the identifer
> will be only for this weather station. After this single-character
> identifier of the weather station "type" is a four-character specific
> station model field. Embedded seemed a nice general term that could
> encompass any stations like this no matter what the micro or bus
> topology,
> we maybe should just choose a different character. After that I'm torn
> between leaving it "1w" or maybe chaning it to T238. Opinions?

Will, I'd suggest going with "e" for embedded. This will cover other stand
alone weather stations that can exists in the future. Steve D and I had
plans to program a PIC to allow a Peet Brothers weather station to connect
to a TNC. The PIC would format the Peet data into APRS data. The benefit
of such a setup is that the TNC can be used for digipeating and you don't
transmit the hugh peet packet format.

And I would still with "1w". That identifies the weather equipment. The
T238 is the controller. Thus people when the view weather from
www.findu.com they can tell what kind of weather instrument collected the
data.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] T238 page up on TAPR Server

From: "Steven R. Bible" <steveb@dandin.com>
Date: Tue, 9 May 2000 10:40:38 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82729-2000.05.09-09.42.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All, Greg has created the T238 page on the TAPR server and took Will's
picture and put it on the home page. This way readers of CC will go
straight to the home page and see the T238 up front. Take a look.

I asked Greg to put a link to Will's web page.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] Re: T238 page up on TAPR Server

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 09 May 2000 17:19:23 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82795-2000.05.09-18.21.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Steven R. Bible" wrote:

> All, Greg has created the T238 page on the TAPR server and took Will's
> picture and put it on the home page.

Why not use the picture where all the imperfections have been removed?
That's the one that we used in the Circuit Cellar article.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] Re: T238 page up on TAPR Server

From: "Steven R. Bible" <steveb@dandin.com>
Date: Tue, 9 May 2000 19:29:02 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82799-2000.05.09-18.31.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Where is it?

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Russ Chadwick
> Sent: Tuesday, May 09, 2000 7:19 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: T238 page up on TAPR Server
>
>
> "Steven R. Bible" wrote:
>
> > All, Greg has created the T238 page on the TAPR server and took Will's
> > picture and put it on the home page.
>
> Why not use the picture where all the imperfections have been removed?
> That's the one that we used in the Circuit Cellar article.
>
> Russ
>
>

> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Re: Rain Data

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 9 May 2000 20:47:49 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82811-2000.05.09-19.42.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, May 08, 2000 11:19 PM
Subject: [wxsig] Rain Data

> Folks:
>
> As luck would have it, we have had a nice drizzle all day today, the
day
> after I installed my rain guage! We've had 0.31 inches so far
today. It
> was neat to see the data on wx.findu.com as well as my TH-D7A while
driving
> home from work. Of course for us colorado folk, 0.31 inches is a
lot of
> rain, so seeing the tiny dimple on wx.findu.com for our "monsoon"
kind of
> busted the ego a bit. Oh well :-) Based on the graphing data, I
can say
> that I'm a fan of the rain-since-midnight format. having both is
nice
> though.

 Sheesh ... I am glad mine isn't up yet (just finally got wind
direction stuff calibrated!) We had about 8 inches of rain today - one
local mountain river that usually runs about 25 feet wide is 300 feet
wide in places! Several road washouts ... power lines down, phones out
... <sigh>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] TAPR Web page

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 9 May 2000 21:05:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-82844-2000.05.09-22.10.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Actually before we get too involved with the picture on the website, we had
better get one with a 4-line display on it!
I tried about six times to get a decent shot with artificial light this
evening and they all turned out ugly. The earliest I will be able to get a
shot will likely be Saturday.

Other than that, I agree with Steve, if you can throw in the (correct) link
to my homepage, it makes a nice introduction.

will

This message sent using 100% recycled Electrons

(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] Re: Running a quart low... FOLLOWUP

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Fri, 12 May 2000 08:09:05 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83321-2000.05.12-07.10.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

First of all, the problem is not the T238. That's the good news. I
still don't know why the problem occurs, but it is definitely not the
T238. I was able to borrow another wx kit from a friend (KD4ZDD)
and have had it in place for almost 48hours with no errors at all and
time of day is correct as well.

I have my unit down and open and I don't see anything unusual
visually, but hopefully I will be able to run a few tests this weekend.
One thing I noticed almost immediately is that the reed switches
on my unit are _much_ quieter than on the other unit I borrowed; so
much so that they are barely audible. My unit is almost a year or
so newer than the one I borrowed which one can clearly hear the
reeds. I am not sure if I got a bad batch, or if they have "changed"
the reeds. Perhaps a quick poll of the other users on this list might
be able to help on the "audibility" of the switches and whether what
I have is ok or not.

On 7 May 2000, at 16:09, William Beals wrote:

> Aaron:
>
> Have you done any work on the sensors? The fact that it is every fifth LED
> flash means that something is dying regularly. The fact that it is always
> the wind direction that accumulates errors narrows the problem down to a
> few routines. The only routines I have in there that could take longer
> than 100ms because of some loops are the routines that open and close the
> channel to the wind direction sensors. If you run a calibration does it go
> smoothly? If you have a pretty decent silly-scope, you should see a long
> gap (3+ seconds) in the 1-Wire traffic. After that you should see a single
> burst of data, 800ms of silence, and then data bursting every 100ms seven
> times. Of that group of seven bursts, each should last less than 20ms. In
> that group of seven, I suspect one of the groups of bursts is lasting
> longer than 100ms and causing the LED to stay on longer. Can you tell
> which one it is?
>
> BTW: Have you tried hooking this up to the DS9097 on your PC to confirm
> that this problem is with the T238 and not the PC too?
>
> will
>

Random Quote:

If you boil ice, are you removing it from its natural state?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] Re: Running a quart low... FOLLOWUP

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Fri, 12 May 2000 12:12:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-83377-2000.05.12-13.15.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron Morrison wrote:

> I have my unit down and open and I don't see anything unusual
> visually, but hopefully I will be able to run a few tests this weekend.
> One thing I noticed almost immediately is that the reed switches
> on my unit are _much_ quieter than on the other unit I borrowed; so
> much so that they are barely audible.

Aaron,

I have several weather station units. One is such that you can clearly hear the direction reed switches, but it performs the same as ones that you can't hear the switches. The first question is does the unit work with the Dallas Semiconductor Weather station software?

Can you measure the resistance through the reed switches when a magnet is close? If so, I could do the same thing here and we could compare the resistance (open and closed) of the switches between one of my units which works well and with your unit that is not working well.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] Stuff

From: William Beals <wmbeals@compuserve.com>
Date: Fri, 12 May 2000 22:59:29 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83497-2000.05.13-00.03.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

Aaron: Bummer on the weather station having some problems. Given you said it worked before, I guess something degraded over time. I'll admit I'm a bit relieved that it appears to not be the T238. One thing you may want to try is to use the ibutton viewer and verify you can reliably talk to the temperature sensor, wind speed counter, and wind direction switch. This software is intended to talk to individual devices and may help isolate the bad device. If all devices are bad, then you can assume something is corrupting the bus and work on isolating that. You won't be able to talk to the wind direction IDs themselves as the ibutton viewer doesn't handle the cascaded switches. Worth a try I hope.

All: Alas I have been assigned a series of business trips over the next two weeks. I will be out Sun-Wed next week in DC, then the entire week afterwards in Japan. Unfortunately, I'm going to be a bit scarce for a bit. On both trips I won't have access to my home email. Russ has my work email address which I hope to be able to access and could forward anything urgent.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] Re: Board updates

From: John Koster <w9ddd@tapr.org>
Date: Sat, 13 May 2000 12:19:53 -0500 (CDT)

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83580-2000.05.13-12.21.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here's the revised board layout. Still uses the same switches, other wise
I think it covers the items discussed. Oh, I still have done nothing with
the + signs on the caps. This is a major pain to fix. I can still see
the + on the board I put together so I have not put a priority on it.

John Koster, W9DDD
<w9ddd@tapr.org>

On Sat, 29 Apr 2000, William Beals wrote:

> Folks:
>
> Brian: Given the CCI articles earlier-than-expected release, a board spin
> is pretty urgent. I think we covered all the highlights a week or so ago.
> I don't have the ability to edit your schematic, but hopefully the
> description below will be good enough input.

You could download the demo version of CIRCAD (DOS version is probably
better for compatibility purposes and it runs fine in a DOS window on W95
or NT4.0) You can do everything except do gerber plots on files under
about 64k in size with the demo version. (current file size is 56k)

>
> 1) Change the symbol for SW5 from a single-pole normally closed resistor to
> a single-pole double-throw switch. The common   contact should be
> connected to +5V. The normally closed contact will is still be connected
> to the 6808. The normally open contact needs to be connected to a 10-ohm
> resistor with the other side of the resistor connected to ground.
>
Done.

> 2) Change the bottom connection of V1 from ground to -9V. -9V is available
> from the negative side of C11 near the MAX chip. This is clearly best done
> with an on-sheet connector like you did on VPP.
>

Done, also fixed silk screen out line of the part.

> 3) (the biggie) Can you add a 1x14 header to the board? Ideally without
> removing the 2x7 header. This is a nasty! As best I can suggest, about
> the only place such a header could go would be to the bottom of the board
> in line with the switches. If this is impossible (entirely possible), the
> backup plans are an adapter or cable assembly. I think I may have found a
> cable assembly that may not be too bad for about $1.00.
>

Done.

> 4) With 700 of the existing switches available from Jameco, I am suggesting
> we stick with those. I'll help find some more if we are met with wild
> success and need more than 100 kits.
>

Still using these

> 5) Better (bolder) labling of the four switches.
>
Can't do anything about the bold part (this isn't Word I'm working with),
however I moved the text and made it larger. I had to nuke the N.C
designations to do that, but I think they actually added to the confusion
anyhow. The outline with notches tells the story (until we find a
different switch)

> 6) Naming the functions of the three DE-9 connectors. J5=TNC, J4=Computer,
> J3=Debug.

Done

>
> 7) A request to embolden the silkscreen for the heatsink side of the 7805
> to make the polarity of the device more obvious.
>

Done
[Attachment: wxstn-ts.pdf; application/pdf; 33,465 bytes]
[Attachment: wxstn-tc.pdf; application/pdf; 18,472 bytes]
[Attachment: wxstn-bc.pdf; application/pdf; 18,940 bytes]

46. [wxsig] version 1.08.2r working

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 13 May 2000 12:41:13 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83600-2000.05.13-13.43.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have 1-wire wx station software version 1.08.2r working with the 4X20
LCD and a rain gauge. The T238 board is connected to my outside weather
station which is the wind speed and direction on a light pole at about
22' height on the south side of my garage and the temperature sensor (in
a ventilated enclosure) and the rain gauge at about 5' height on the
north side of my garage. Everything seems to be working fine at long
last :)

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

47. [wxsig] Dallas weather station available at Dayton?

From: Jeff King <jeff@aerodata.net>
Date: Sat, 13 May 2000 21:15:55 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83656-2000.05.13-20.16.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will TAPR be selling any of the Dallas Semiconductor 1-Wire Weather Stations at
Dayton or is this strictly a direct I-button item?

Thanks

-Jeff

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Re: Dallas weather station available at Dayton?

From: John Koster <w9ddd@tapr.org>
Date: Sat, 13 May 2000 20:41:01 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83659-2000.05.13-20.42.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Order direct from dallas semiconducter at their iButton site
www.ibutton.com, that way you won't have to lug it home. (and besides we
don't have any to sell at Dayton or otherwise). I ordered both the WX
station and the rain gage. It was a huge box considering what I had when
I got it all assembled. So they do pack it well.

John Koster, W9DDD
<w9ddd@tapr.org>

On Sat, 13 May 2000, Jeff King wrote:

> Will TAPR be selling any of the Dallas Semiconductor 1-Wire Weather Stations at
> Dayton or is this strictly a direct I-button item?
>
> Thanks
>
> -Jeff
>
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] LOS

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 13 May 2000 20:49:37 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83666-2000.05.13-21.51.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Things have been unusually quiet on the reflector for a few days now. We
are about to start the next board spin, so any more feedback from the beta
folk would be GREATLY appreciated. Hopefully I summarized the feedback in
terms of the board back on 4/30.

The assembly manual should be up to date and is posted on the website
(http://ourworld.compuserve.com/homepages/wmbeals) if you want to offer any
more comments. Steve is still working on the newly revised operations
manual.

Any feedback on 1.08.2R software release? While not this past week, I have
been working on the 1.09 release that will include the positioned format as
well as metric display support.

will
(I'm offline 'till Thursday)

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] Re: LOS

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 14 May 2000 10:42:32 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83784-2000.05.14-09.44.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 13 May 2000, at 20:49, William Beals wrote:

> Folks:
>
> Things have been unusually quiet on the reflector for a few days now. We
> are about to start the next board spin, so any more feedback from the beta
> folk would be GREATLY appreciated. Hopefully I summarized the feedback in
> terms of the board back on 4/30.

I think all of the thoughts I had pertaining to the board itself have
been addressed.

>
> The assembly manual should be up to date and is posted on the website
> (http://ourworld.compuserve.com/homepages/wmbeals) if you want to offer any
> more comments. Steve is still working on the newly revised operations
> manual.
>
> Any feedback on 1.08.2R software release? While not this past week, I have
> been working on the 1.09 release that will include the positioned format as
> well as metric display support.
>

I have been running a borrowed unit on my station for a few days
now and haven't seen any problems... However, I haven't received
much rain here to really test the new rain totals, but from what little
I did get it seemed to work ok. I just wish we would get a bit more
rain (we're at a 7+ inch deficit right now)

>From my ill-tempered unit, however, it is clear that the timing
routine is affected by bus errors. I'm not sure if this is a problem of
not being tolerate enough of bus errors -- I do know that the
program checks multiple times for some data (3x if I remember
right) to reduce chances of bad data -- or I have an extreme unit
such that we can ignore the "problem" and make some
troubleshooting notes in the ops manual.

> will
> (I'm offline 'till Thursday)
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293

Random Quote:

    Dictatorship (n): a form of government under which everything
    which is not prohibited is compulsory.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] Re: Stuff

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 14 May 2000 10:56:06 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83786-2000.05.14-09.57.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 12 May 2000, at 22:59, William Beals wrote:

> All:
>
> Aaron: Bummer on the weather station having some problems. Given you said
> it worked before, I guess something degraded over time. I'll admit I'm a
> bit relieved that it appears to not be the T238. One thing you may want to
> try is to use the ibutton viewer and verify you can reliably talk to the
> temperature sensor, wind speed counter, and wind direction switch. This
> software is intended to talk to individual devices and may help isolate the
> bad device. If all devices are bad, then you can assume something is
> corrupting the bus and work on isolating that. You won't be able to talk
> to the wind direction IDs themselves as the ibutton viewer doesn't handle
> the cascaded switches. Worth a try I hope.

I have been running a program watching the unit sitting on the
bench (it's not the ibutton software I need the work laptop to run
that, it's a linux program that shows id numbers) and it has
problems at times reading the wind direction sensors even when
stationary!   Something is definitely going on here... One thought I
have is that I have a weak magnet and it is not pulling on the reeds
enough -- not real sure of that, though.

>
> All: Alas I have been assigned a series of business trips over the next
> two weeks. I will be out Sun-Wed next week in DC, then the entire week
> afterwards in Japan. Unfortunately, I'm going to be a bit scarce for a
> bit. On both trips I won't have access to my home email. Russ has my work
> email address which I hope to be able to access and could forward anything
> urgent.
>
> will
>

Have a good time.

Random Quote:

Synonym (n): Word used in place of a word you can't spell.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Re: Stuff

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sun, 14 May 2000 10:18:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83804-2000.05.14-11.20.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron Morrison wrote:

> I have been running a program watching the unit sitting on the
> bench (it's not the ibutton software I need the work laptop to run
> that, it's a linux program that shows id numbers) and it has
> problems at times reading the wind direction sensors even when
> stationary! Something is definitely going on here... One thought I
> have is that I have a weak magnet and it is not pulling on the reeds
> enough -- not real sure of that, though.
>

Aaron,

Have you adjusted the wind vane cross arm to be closer to the reed switches? Of course, be sure that it doesn't hit one and break the glass envelope.

Is the trouble with all eight reed switches or just a few, i.e. does it work fine when you manually hold the wind vane in any one direction? Hard to imagine that all 8 reed switches are bad. More likely to be the switch (I think it a DS2407) that controls whether the reed switches are across the bus or not.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Lightning sensors

From: Jeff King <jeff@aerodata.net>
Date: Sun, 14 May 2000 21:48:51 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83895-2000.05.14-20.49.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all:

I see some discussion in the archives of the SIG about lightning sensors... does anyone have a source of some lo-cost ones? Also, has anyone seen anyone that networked these things together, be it over the air or the intenet? (for the purpose of generating a "map" of lighting activity).

Thanks!

-Jeff wb8wka

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Re: Lightning sensors

From: John Koster <w9ddd@tapr.org>
Date: Sun, 14 May 2000 20:51:50 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-83899-2000.05.14-20.53.43--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

This is not an answer, but you reminded me of another WX sensor that I
think might be of use. A light level sensor. It would in effect tell you
if it were overcast or sunny.

John Koster, W9DDD
<w9ddd@tapr.org>

On Sun, 14 May 2000, Jeff King wrote:

> Hi all:
>
> I see some discussion in the archives of the SIG about lightning sensors... does
> anyone have a source of some lo-cost ones? Also, has anyone seen anyone that
> networked these things together, be it over the air or the intenet? (for the purpose of
> generating a "map" of lighting activity).
>
> Thanks!
>
> -Jeff wb8wka
>
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] Dayton

From: Russ Hummel <hummel@HSC.VCU.EDU>
Date: Mon, 15 May 2000 09:08:17 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-84007-2000.05.15-08.10.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Who from the WX station group is going to be at Dayton.? Do you guys have a
booth or should I look for you at the TAPR booth. I will be there Friday
and Saturday. It would be great to meet some of the other Beta testers, and
the designers of the WX station.   Post a meeting time or place and I'll
meet you there

Thanks   Russ Hummel, WB4PGT
Russ Hummel   CTA2RD
Biomedical Engineer & LAN Manager
Dept of Anesthesiology
Medical College of VA @ VCU
804-828-2212

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] RE: Dayton

From: "Steven R. Bible" <steveb@dandin.com>
Date: Mon, 15 May 2000 12:37:07 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-84054-2000.05.15-11.39.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ, come on by the TAPR booth. It'll be hit and miss, but Steve K4HG and
myself will be there. I'll be bringing my T238, 1-Wire Weather Station, and
Rain Guage to show off.

- Steve N7HPR

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Russ Hummel
> Sent: Monday, May 15, 2000 9:08 AM
> To: TAPR WX Special Interest Group

> Subject: [wxsig] Dayton
>
>
> Who from the WX station group is going to be at Dayton.? Do you
> guys have a
> booth or should I look for you at the TAPR booth. I will be
> there Friday
> and Saturday. It would be great to meet some of the other Beta
> testers, and
> the designers of the WX station.   Post a meeting time or place and I'll
> meet you there
>
> Thanks   Russ Hummel, WB4PGT
> Russ Hummel   CTA2RD
> Biomedical Engineer & LAN Manager
> Dept of Anesthesiology
> Medical College of VA @ VCU
> 804-828-2212
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] RE: wxsig digest: May 15, 2000

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Tue, 16 May 2000 07:55:56 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-84225-2000.05.16-08.03.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello!
I just joined the WX SIG and got my first digest this morning.
I ordered a 1-wire station kit last week.   I'm looking forward to bringing
this up to running.
On the website I see the LCD display kit is listed but no price specified.
Sorry to be a pest, but when will these T238's be up for sale?

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Design Engineer
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

58. [wxsig] RE: wxsig digest: May 15, 2000

From: "Steven R. Bible" <steveb@dandin.com>
Date: Tue, 16 May 2000 10:39:21 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-84239-2000.05.16-09.41.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

RE: wxsig digest: May 15, 2000Hello Kyle,

We are working on that. We have finished the beta testing and making slight
changes to the kit. We expect to be shipping the kit in 4-6 weeks time. In
the meantime, we'll be setting the price and start taking pre-orders.

- Steve, N7HPR

  -----Original Message-----
  From: bounce-wxsig-15059@lists.tapr.org
[mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Ehler, Kyle
  Sent: Tuesday, May 16, 2000 8:56 AM
  To: TAPR WX Special Interest Group
  Subject: [wxsig] RE: wxsig digest: May 15, 2000

  Hello!
  I just joined the WX SIG and got my first digest this morning.
  I ordered a 1-wire station kit last week.   I'm looking forward to

bringing this up to running.
  On the website I see the LCD display kit is listed but no price specified.
  Sorry to be a pest, but when will these T238's be up for sale?

  Kyle Ehler kyle.ehler@lsil.com
  Design Engineer
  LSI Logic Corporation
  3718 N. Rock Road
  U.S.A. Wichita, Kansas 67226
  Ph. 316 636 8657
  Fax 316 636 8889
  Fax 316 636 8315

59. [wxsig] Item on Reed Switches

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 16 May 2000 22:15:09 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-84374-2000.05.16-23.17.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a good short article on reed switches and clearly shows why they
are so widely used.

> FYI, there is an interesting article on page 81 of the May issue of
> ECN where the author compares reed switches to Hall Effect sensors.
> You can check it out on the web at
> http://www.ecnmag.com/ecnmag/issues/2000/05012000/ec05ss01_.asp
>
> According to the author, reed switches are used in ATEs for wafer
> testing. One application can use up to 20,000 reed switches where one
> reed failure constitutes a 50 ppm failure rate.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] Test Please delete

From: Paul Womble <pwomble1@tampabay.rr.com>
Date: Fri, 19 May 2000 19:35:34 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-84882-2000.05.19-18.33.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just testing...

Paul AJ4Y

--
Polk County Amateur Radio Emergency Services:
http://www.qsl.net/polkares
Florida Contest Group:
http://www.qsl.net/fcg

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] In and Out

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 20 May 2000 09:50:02 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-84996-2000.05.20-11.41.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Only one email between trips this time, sorry. I'm whining loudly about
too much travel for work. I take off again tomorrow for Japan and won't be
back online until after the memorial day weekend. Many thanks to all the
Beta folk that are answering a lot of questions in my temporary absense.

All: Steve has given the the Ops manual back. I'll be taking it with me

on the trip to hopefully work on it. Many features have been added since I last messed with it.

All: We had a pretty amazing storm here on Wednesday. If you go to http://wx.findu.com/n0xga or http://wx.findu.com/kb0tvj-5 you can see the rain we got. My rain sensor seems to have worked fine, but Russ had some problems for reasons unknown yet. Russ and I are trying to figure out if it is a sensor or T238 problem. Aaron is still waiting for some rain to see how his works. Is anyone else sensing rain yet?

Aaron: Your experience is showing that I do have a hole in the code where big errors are messing up the timing. The needed solution is to clear up the errors, but I should handle the error condition more gracefully than I do. You found the one (known) piece of unbounded code I have in my sequencer code! What I will do is go in and limit the number of times I try to open/close the wind direction sensor gate to what can fit in 100ms. If I go beyond that I will just abandon trying to get wind direction data. It would be nice to say something to the user, but I'm not sure where to put that just yet.

Jeff: I do want to do lightning sensors, it looks like it would be fun to get a lightning bolt count for here in Colorado. I had a website that had a pretty cheap sensor (about $50) and thought I had saved the link for it. Alas for the life of me I can't find the website link or an email where I may have announced it to the group.

John: The light level sensor sounds intesting. I've seen references to luminocity in the APRS specs, but have no idea what it takes to get something that is reasonably calibrated.

All: Just for reference, my to do list is shown below. Short term stuff is for the next release. Any feedback on the current release is always appreciated.

will

```
------------------------
Current To_Do list

To Do (Short Term):
===========================
*Position string
Metric support
Catastrophic error checking (wdir)
Multiple Temp sensor support
Other way of counter sensors

To Do (Long Term):
===========================
Data logging with DS1993
Russ's multi-day format (DS1993 required)
MON08 Better ID capture

To Do (Maybe):
===========================
Barometric Pressure (need sensor)
Humidity (need sensor)
Indoor temperature
Ligtning detector

-------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
-------------------------------------------------------------
```

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] Lightning detector page

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 20 May 2000 13:35:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85045-2000.05.20-14.37.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I finally found the web page for the lightning detector I saw. No idea if
it is good/bad/whatever. It is cheap at $25 and appears to be low power.

http://www.stormwise.com/lightning_detectors.htm go down a bit for the
Model VLF2002

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

63. [wxsig] Re: In and Out

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sat, 20 May 2000 18:18:09 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85061-2000.05.20-17.20.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 20 May 2000, at 9:50, William Beals wrote:

> Folks:
>
> Only one email between trips this time, sorry. I'm whining loudly about
> too much travel for work. I take off again tomorrow for Japan and won't be
> back online until after the memorial day weekend. Many thanks to all the
> Beta folk that are answering a lot of questions in my temporary absense.
>

Perhaps you can get a few hours in with a geisha while you are
there <big grin>. Even I have noticed a rise in the buzz on the
various sigs about the kit. That's good. I also expect a few more
to come by and start asking questions after everyone has settled
down from Dayton.

> All: We had a pretty amazing storm here on Wednesday. If you go to
> http://wx.findu.com/n0xga or http://wx.findu.com/kb0tvj-5 you can see the
> rain we got. My rain sensor seems to have worked fine, but Russ had some
> problems for reasons unknown yet. Russ and I are trying to figure out if
> it is a sensor or T238 problem. Aaron is still waiting for some rain to
> see how his works. Is anyone else sensing rain yet?

I know the sensor works; I was waiting for rain to check the "new"
format when sent by the TNC over the air. Short term forecast is to
be pretty dry for a while, but longer term is better once the
afternoon showers start up in a few weeks.

>
> Aaron: Your experience is showing that I do have a hole in the code where
> big errors are messing up the timing. The needed solution is to clear up
> the errors, but I should handle the error condition more gracefully than I
> do. You found the one (known) piece of unbounded code I have in my
> sequencer code! What I will do is go in and limit the number of times I
> try to open/close the wind direction sensor gate to what can fit in 100ms.
> If I go beyond that I will just abandon trying to get wind direction data.
> It would be nice to say something to the user, but I'm not sure where to
> put that just yet.

I put my sensor board on the bench and ran some tests by letting
it sit there and log the results. It would act odd at times (no

readings, etc.) Dallas should be sending me a new sensor board
so hopefully things will be better then. retry limit sounds like a
good idea. Perhaps a different symbol (say "???", or "ERR") in the
wind dir field after an error count rollover.

> All: Just for reference, my to do list is shown below. Short term stuff is
> for the next release. Any feedback on the current release is always
> appreciated.
>
> will
>

Perhaps you have already done this, but I assume you are going to
expand the TNC format to include the other rain totals that you are
now keeping?

> ------------------------
> Current To_Do list
>
> To Do (Short Term):
> ===========================
> *Position string
> Metric support
> Catastrophic error checking (wdir)
> Multiple Temp sensor support
> Other way of counter sensors
>
> To Do (Long Term):
> ===========================
> Data logging with DS1993
> Russ's multi-day format (DS1993 required)
> MON08 Better ID capture
>
> To Do (Maybe):
> ===========================
> Barometric Pressure (need sensor)
> Humidity (need sensor)
> Indoor temperature
> Ligtning detector
>

Random Quote:

    Intuition (n): an uncanny sixth sense which tells people
    that they are right, whether they are or not.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] Re: In and Out

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 20 May 2000 17:38:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85067-2000.05.20-18.41.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> All: We had a pretty amazing storm here on Wednesday. If you go to
> http://wx.findu.com/n0xga or http://wx.findu.com/kb0tvj-5 you can see the
> rain we got. My rain sensor seems to have worked fine, but Russ had some
> problems for reasons unknown yet. Russ and I are trying to figure out if
> it is a sensor or T238 problem.

The *.hst weather packets from our T238s during the rain storm Will refers to
are attached. We live about 40 miles apart so you shouldn't expect the same
rain data at both sites. I started the attached data files when the rain
started at both sites and the files cover several hours when there was general
rain activity in the area. I've made some comments in the file with my data.
Both sites have the same equipment and the same software.

Russ
kb0tvj
[Attachment: russrain.txt; text/plain; 7,377 bytes]
[Attachment: willrain.txt; text/plain; 6,656 bytes]

65. [wxsig] Re: Lightning detector page

From: Brian Short <k7on@earthlink.net>
Date: Sun, 21 May 2000 19:13:00 +0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85175-2000.05.21-14.15.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thank you for the URL reference. I was just wondering if there are
any problems with these units in a noisy (RF) environment like cities?
Or if an active ham station on HF would cause any problems?

I would be happy to hear from someone who has used this device
in the city at their radio-active QTH.

Thanks, Brian

>I finally found the web page for the lightning detector I saw. No idea if
>it is good/bad/whatever. It is cheap at $25 and appears to be low power.
>
>http://www.stormwise.com/lightning_detectors.htm go down a bit for the
>Model VLF2002

--
mailto:k7on@earthlink.net
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

66. [wxsig] WS1 bring up.

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Mon, 22 May 2000 08:08:38 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85280-2000.05.22-08.11.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I received the ws1 kit last week. I purchased the rain sensor also.
The assembly instructions were ample for me, but for the unwashed might be a
challenge.

The speed, temp and direction sensors work, but I have not gotten the rain
sensor to work.
If I am correct, you must first run the 'create list' without the rain
sensor, then two wire attach and run the weather station application to get
the system to recognize it? Have I missed something?
I need to calibrate the sensor too, but once the sw recognizes it this
should not be a problem.

Cant say I like the choice for the location of the temp sensor...anybody got
schematics to this thing? I would like to relocate the temp sensor or be
able to deselect it. The errors induced by sun-pumped ambient are
unacceptable. There should at minimum be air flow over the sensor rather
than containment, but I am not criticizing. Overall the kit is high quality
and well executed.

My wife is the ham in the family (KF0ZL)

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Electrical Designer
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

67. [wxsig] Info on maximum rate for rain gauge

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 22 May 2000 21:13:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85465-2000.05.22-22.16.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> "Can you tell me what is the highest rain fall rate that the 1-wire
> rain
> gauge will be accurate."
>

> I have been unable to obtain a precise answer, however, I understand
> that the rain gauge should read accurately up to about the 2"/hr rate.

> At some point, water starts to become more of a stream rather than
> drops that are separated far enough for the tipping bucket to switch
> positions. When this occurs, a drop or drops can hit the apex of the
> bucket as it shifts and so splatters. Obviously, while we cannot
> predict exactly where the water will go, some will not go in the
> correct bucket and may even go in the wrong one. And some part of the
> drop(s) will not go in either bucket. Since each bucket is calibrated
> to tip at just 0.16 oz, a single drop is important. It may be equally
> obvious, that the rate where this occurs depends on the particular
> properties of a given rain gauge assembly.
>
> Regards,
>
> Dan Awtrey   Staff Engineer
> Dallas Semiconductor   Phone: 972-371-6297

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] Lightning detectors

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 22 May 2000 21:14:16 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85466-2000.05.22-22.17.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Recently there was some interest in lightning detectors. Here are some
URLs that were on the Dallas Semiconductor e-mail reflector.

> Subject: Re: [weather] Lightning detectors
>
> jmhannon@inav.net wrote:
>
> > Here are my links on the subject oflightning detectors.
> > http://www.stormwise.com/lightning_detectors.htm
> > http://www.boltek.com/
> > http://kato.theramp.net/sferics/

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] Rain Gauge Problems

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 22 May 2000 21:14:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85467-2000.05.22-22.17.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This was sent by Dallas Semi in response to a comment that someone's
1-Wire rain gauge wouldn't count. This is Dan Awtrey's response and
tells some trouble shooting approaches to this problem.

> Subject: [weather] RE: Rain gauge trouble
>
> Can you provide more information? Does the rain gauge show in the
> weather station display? When running TMEX iButton Viewer do you see
> two ID numbers ending in -1D? (One is the DS2423 counter for wind
> speed, the other would be the DS2423 counter for the rain gauge).
>
> Is the problem that it displays, but does not count? If so, run TMEX
> and double click on the ID number for the DS2423 in the rain gauge and

> open the counter window. Set the sample rate at 1/sec and select page
> 15. Each time the bucket tips, you should see the count increment. If

> not, make sure that the bucket moves far enough from the magnet that
> the reed switch is sure to open. If none of this works, send an email
> to dang.nguyen@dalsemi.com and request a replacement rain gauge
> interface board. Be sure to include your shipping address.
>
> Regards,
>
> Dan Awtrey   Staff Engineer
> Dallas Semiconductor   Phone: 972-371-6297

Russ
kb0tvj

70. [wxsig] question

From: Russ Hummel <hummel@HSC.VCU.EDU>
Date: Tue, 23 May 2000 11:28:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85576-2000.05.23-10.30.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is it possible to hook up and run both the Dallas Semiconductor computer
interface (DS9097U) and the T 238 board/ interface without burning
something up. If so can you run both the T 238 system and the Dallas
semiconductor WX software. After all it is a network system. Any ideas ?
Thanks   Russ Hummel
Russ Hummel   CTA2RD
Biomedical Engineer & LAN Manager
Dept of Anesthesiology
Medical College of VA @ VCU
804-828-2212

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] Re: question

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 23 May 2000 22:34:07 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-85741-2000.05.23-23.37.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ Hummel wrote:

> Is it possible to hook up and run both the Dallas Semiconductor computer
> interface (DS9097U) and the T 238 board/ interface without burning
> something up. If so can you run both the T 238 system and the Dallas
> semiconductor WX software.

I don't know if this is possible or not. Neither Will or I have tried it.
We specifically designed the T238 to avoid having to use the DS9097. I'm
sure that the two controllers (PC and T238) couldn't run a single weather
station asynchronously. There would have to be some control so that only
one accessed the weather station at a time.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

72. [wxsig] [Fwd: Remote Update]

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 29 May 2000 08:37:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87197-2000.05.29-09.40.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This message is a multipart message that I received from Will. Part of
it was written on the plane on the Great Circle Route coming back from
Japan.

He has located some problems in the rain gauge code in version 1.08.

Russ

kb0tvj

73. [wxsig] problmes with display

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Mon, 29 May 2000 21:04:24 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87286-2000.05.29-20.05.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I finally got the One=wire station check out via the Dallas software
and I finished backlite power wiring and fired up the T-238 for real
and my display seems screwy. I disassembled and re-checked all the
voltages, verified the wiring harness and connectors and the +/-
voltages on the Max232 which should be +/- 8vdc are +4.46 and -4.06.
That doesn't seem to matter to the display though. With no backlite
voltage its readable in moderate lite and with the backlite voltage it
displays beautifully, buttttttttt ... the display is all "o" (lower
case oh-s) and little right pointing arrows. the sequence of the
display is such that I can "see" the sign on banner, that is I can see
a progressives change in the display if I hit reset that seems like a
signon sequence.

 sooo ... is the display bad? I handled it very carefully; In fact,
prior to assembling this afternoon it was only out of its protective
bag once to have the 16 pin header soldered on.

 PS ... am I going blind in my old age or are the "three quick
flashes" as in "three quick flashes, then 1 second pulses" very quick
flashes. I simply don't see them but I do get the one second pulses
after about 10 seconds

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

74. [wxsig] Re: problmes with display

From: Russ Chadwick <kb0tvj@boulderneWs.infi.net>
Date: Mon, 29 May 2000 19:35:17 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87303-2000.05.29-20.38.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley, KA2BQE" wrote:

> With no backlite
> voltage its readable in moderate lite and with the backlite voltage it
> displays beautifully, buttttttttt ... the display is all "o" (lower
> case oh-s) and little right pointing arrows. the sequence of the
> display is such that I can "see" the sign on banner, that is I can see
> a progressives change in the display if I hit reset that seems like a
> signon sequence.

Mine displays the same thing whether the back light is on or off. No
change in the lettering, even when switching the back light on and off as
fast as I can do it manually.

I have a dropping resistor in line with the 13.9 power supply to drop the
voltage when the back light is on. This keeps the regulator from getting
so hot. I have 82 and 68 ohm resistors in parallel. They are 1 Watt
resistors and get pretty warm.

> PS ... am I going blind in my old age or are the "three quick
> flashes" as in "three quick flashes, then 1 second pulses" very quick
> flashes. I simply don't see them but I do get the one second pulses
> after about 10 seconds

"Old age" is a relative thing, but I can see the three quick flashes.
They are quick, and sometimes I don't see them. However, whenever I
remember to look for them, I can see them. However, I don't always
remember to look, and that's probably related to "old age" :)

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

75. [wxsig] Re: problmes with display

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 29 May 2000 21:48:56 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87305-2000.05.29-20.49.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "Russ Chadwick" <kb0tvj@bouldernews.infi.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, May 29, 2000 9:35 PM
Subject: [wxsig] Re: problmes with display

> "Brian B. Riley, KA2BQE" wrote:
>
> > With no backlite
> > voltage its readable in moderate lite and with the backlite
voltage it
> > displays beautifully, buttttttttt ... the display is all "o"
(lower
> > case oh-s) and little right pointing arrows. the sequence of the
> > display is such that I can "see" the sign on banner, that is I can
see
> > a progressives change in the display if I hit reset that seems
like a
> > signon sequence.
>
> Mine displays the same thing whether the back light is on or off.
No
> change in the lettering, even when switching the back light on and
off as
> fast as I can do it manually.

I realize that is how it should be, but my display, lit or unlit is
trash, all "o"s and little right arrows ...

> I have a dropping resistor in line with the 13.9 power supply to
drop the
> voltage when the back light is on. This keeps the regulator from
getting

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

76. [wxsig] Re: problmes with display

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Mon, 29 May 2000 22:00:16 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87310-2000.05.29-21.02.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 29 May 2000, at 19:35, Russ Chadwick wrote:

>
> > PS ... am I going blind in my old age or are the "three quick
> > flashes" as in "three quick flashes, then 1 second pulses" very quick
> > flashes. I simply don't see them but I do get the one second pulses
> > after about 10 seconds
>
> "Old age" is a relative thing, but I can see the three quick flashes.
> They are quick, and sometimes I don't see them. However, whenever I
> remember to look for them, I can see them. However, I don't always
> remember to look, and that's probably related to "old age" :)
>
> Russ
> kb0tvj
>

You don't forget to look, you just have a "senior moment" <grin>.
If you say "tick.tick.tick." at a normal pace, then you have an idea
of what rate the led's flash.

As for the odd characters, I'm not sure. You said that you checked
the connectors (I assume that also means the connections, too --

some of those connector inserts were a bit stubborn to stay put
and pushed out a bit until I adjusted the holding tabs.)

73

Random Quote:

My car isn't broken down, it's mechanically challenged!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

77. [wxsig] Back, Live...

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 29 May 2000 21:05:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87318-2000.05.29-22.13.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

(Notes for a lot of folk here that are consolidated!)

Ohayo Gazaimas! It is nice to be back in the land of English signs and
spoken word! I've been to Europe several times, but this was my first trip
to the orient. VERY different! I kind of enjoy culture shock, so I had my
fill. Time to get caught up. I see Russ forwarded my email I wrote in
Japan, but couldn't send. My first assignment before my next trip is to to
some research on how the Japanese phone system works!

Brian: Since no-one responded to your question about the lightning
detector in a radio environment, I may be the first to find out once I get
the current round of sensors and bugs taken care of.

Kyle: I am not quite sure what software you are using for bringing up your
sensor kits. "Create List" sounds like something the Dallas software does.
 I have a similar approach with the embedded software here, but after lots
of feedback that folk didn't like it, I am changing it to be a bit more
flexible. If multiple counters (for wind speed or rain) are encountered
you have the choice of either removing one to figger out which is which or
you can be presented with the IDs of both and select the ID if you already
know it. I will do something similar for multiple temperature sensors as
well. This new code hasn't been released yet, but will be soon (and
announced on this sig or check
http://ourworld.compuserve.com/homepages/wmbeals periodically)

Kyle: Yes, the location of the temperature sensor isn't very good at all.
 Russ has the plans for a cheap and effective home-made temperature shield
that will get released soon as well. The reason I am putting in code for
multiple temperature sensors is that you can add Russes sensor to the
1-Wire bus and then not have to bother removing the other one.

Russ C: Thanks for the ligtning sensor links. Boltek looks pretty steep.
 The other two (one matching what I found) look pretty good.

John: Cool on the boards going out. 4 WEEKS AND COUNTING UNTIL KIT
RELEASE!!!

Steve: I'll get a couple more micros in the mail to you early this week.
 Still recouperating from the trip!

Steve: I just checked the T238 page, 3002 hits. (I can be blamed for
about seven!) Still any chance of a link to the compuserve site since it
was messed up in the Circuit Cellar article?

Russ H: Alas there are some pretty good reasons why you would not want to
"network" the sensors between two masters. During times such as
temperature conversion, the master requesting that conversion is required
to actively drive the bus high to supply power to the converter. If
another master were to get on there and want to drive it low, you would
have bus contention. This would be in addition to all the errors you would
get with two masters tromping all over eachothers transactions. All hope
is not lost though. Can you use the serial port output of the T238 to get
your data in the computer that way. The data is already converted,
filtered, and ready to go? You have several formats to choose from.

All: A nerdvana moment in Japan. I could not get email or any kind of

internet connection working. One of gentlemen I visited there had a cell
phone that could browse web pages. He pulled up wx.findu.com and I was
able to get the weather at my house that was less than three minutes old.
 I couldn't call, email, or anything else, but was able to get the weather
at my house! (Nerdvana: Nerd Nirvana, quoted from a Dilbert Cartoon)

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

78. [wxsig] Re: problmes with display

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 29 May 2000 23:14:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87320-2000.05.29-22.16.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron,

The LED backlight is completely separate from the display. Make sure it is
4.4VDC.

Make sure the micro is programmed properly. Only the latest firmware
supports the 4 lines. Yet, the older firmware should work but displays only
2 lines.

The LCD has to be initialized to display properly. I find that powering off
(unpluging the power jack) and power on helps. I've been meaning to tell
Will that I think there is a problem with initializing the LCD after the
reset button is pushed.

- Steve, N7HPR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

79. [wxsig] Display issues

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 29 May 2000 21:36:03 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87326-2000.05.29-22.37.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I've assembled a whopping two units so far, so my experince is limited.
 Both came up fine, but I didn't get the cable pieces you had and had to
roll my own. My first suggestion (if you havn't already done it) is to do
a point-to-point check on all fourteen signals from the main board to the
display, checking continuity as well as shorts. Take note that pin 1 is on
opposite sides between the display and main board. Russ is right, the
backlight shouldn't matter at all. I have never hooked mine up for
example, maybe I should. For now, leave it disconnected to reduce the
number of possible problem sources. Also, don't forget that for the 2x7
header the pin numbering alternates sides. Here is the right side of the
headers pin sequencing assuming you are looking with the connectors on top
and the switches on bottom.

... 5 3 1
... 6 4 2

The issue of having the three flashes or not is likely a software version
issue. The very first micros I sent out did not have this flash. I added
based on beta feedback. If you don't get the three quick flashes but do
get the 1-second flashes after about 10 seconds, then you have older
software.

Not getting enough voltage on the MAX232s is a concern. That does suggest
some loading issues on the MAX chip. Confirm the voltage after removing
the display connector completely. If it is still +/-4V, then start looking
elsewhere for problems. It could be a bad 1uF cap, or some wiring errors.

Since my bio is the "young whipper-snapper", I am obliged to refrain from
age jokes (other than to say I'm not without some gray hair!)

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] Re: problmes with display

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Mon, 29 May 2000 23:41:19 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87329-2000.05.29-22.44.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 29 May 2000, at 23:14, Steven R. Bible wrote:

> Aaron,
>

It's Brian Riley that has the problem...mine is working fine.

> The LED backlight is completely separate from the display. Make sure it is
> 4.4VDC.
>
> Make sure the micro is programmed properly. Only the latest firmware
> supports the 4 lines. Yet, the older firmware should work but displays only
> 2 lines.

Yes, make sure it's programmed. The last time I upgraded, I did it
3 times before things started working right... I thought I had
something awry, but it was just bogus programming.

>
> The LCD has to be initialized to display properly. I find that powering off
> (unpluging the power jack) and power on helps. I've been meaning to tell
> Will that I think there is a problem with initializing the LCD after the
> reset button is pushed.

Hmm, every time I've reset it has worked ok.

>
> - Steve, N7HPR
>

Aaron

Random Quote:

Everyone makes mistakes, if not we'd be single!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] Picture of funky Display on T238

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Tue, 30 May 2000 07:30:58 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87372-2000.05.30-06.32.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Having further got my act together I hauled out the digital camera and
took a picture of what the display looks like ... bad display?? a
shorted line or lines??? (I have rechecked that, both electrically
via continuity test and visual under magnification)

 73 de brian, ka2bqe
[Attachment: T238Display1.jpg; image/jpeg; 54,714 bytes]

82. [wxsig] Re: Picture of funky Display on T238

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Tue, 30 May 2000 07:43:20 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87375-2000.05.30-06.44.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Tuesday, May 30, 2000 7:30 AM
Subject: [wxsig] Picture of funky Display on T238

> Having further got my act together I hauled out the digital camera
and
> took a picture of what the display looks like ... bad display?? a
> shorted line or lines??? (I have rechecked that, both electrically
> via continuity test and visual under magnification)

 Yes also I have the original firmware that was shipped by Steve B (v
1.07???). Should that make any difference?

 73 de brian, ka2bqe

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

83. [wxsig] Re: Picture of funky Display on T238

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 30 May 2000 09:19:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87388-2000.05.30-08.22.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brain (not Aaron :-),

Make certain that you have pin 1 on the T238 PCB going to pin 1 of the LCD.
I think you mentioned this, but I can't tell from your picture.

Also, the 4 line display should work with the firmware already in the micro
supplied.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

84. [wxsig] Lighting sensors.

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Tue, 30 May 2000 16:02:56 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87489-2000.05.30-16.06.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I read something in Circuit Cellar about a year or two ago about a lightning
sensor Ciarcia borrowed and tested on their "home run" system. At the time

this sensor alone was not cheap ($65 or so) and I checked out the referenced website. At that time the sensor and its patent was up for sale ($4M), the site was in Texas somewhere. I bet that is gone now, and since I don't have the issue with me I cannot provide a precise reference to it. I can dig it up if anyone wants. The company had invented a simple circuit that could detect hit rates at a range of 100 miles or more (if memory serves) without any external antenna elements. The entire sensor package fit into a [large] cigar size tube.
The other here referenced sensors seem to require an external pickup element to extend range. I don't relish tempting fate by giving nature a greater reason or opportunity to strike my electronic abode, or increasing the coupling for RF emissions to disrupt functions.

Something like this would be a plus (imho) for EMC test labs who must monitor RF ambients including lightning during certification scans.
The weather station kit I am assembling could be used on our open air test site (OATS) to provide pre-emptive warning of weather conditions during test. I say "could" because it must first pass emissions testing to check it for acceptable limits of radiation. If this wx device cannot pass or be modified to pass, I get to keep it for my wife's ham shack (KF0ZL):-).
Anybody else interested in this outcome?

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
(Product Safety and EMC specialist)
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

85. [wxsig] OK - got it ... damned wiring harness ... fixed ... now the low Max232 voltages

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Tue, 30 May 2000 18:27:34 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87501-2000.05.30-17.28.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I suppose beggars cannot be choosers so I really have no one to blame but myself ... but Stevie B can take a teeny bow. Thanks to a long ago run in with a landmine my hands aren't up to much really fine work like wiring that LCD harness (but they detect rotten weather very well - too bad its the wrong kind of 'digital' interface!) so I asked Steve B to wire it up for me which he did (thankyou Steve it really was appreciated) ... buuuuttttttt .... two of the wires didn't quite connect in the linear 14 pin end of the harness ... the connector was one of those "pushdown" (like TELCO punchdown blocks) connections and the two wires in question were a little short to begin with so the knife edges engaged the bitter ends and insulation only. To make the long story short ... after checking every wire and correcting those two. I have a clean display ... look for me at FinduWX by the weekend.

Thanks for all the suggestions ... now my one last 'problem' is the output of the Max232. As I said the V+ and V- are +4.46 and -4.06 where will this show up as a 'problem?' My display backlite is OK. RS232 will work on anything beyond +/- 3V ... how about programming?

What do I check? Pull the Max232 and look for shorted capacitors? what?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

86. [wxsig] RE: OK - got it ... damned wiring harness ... fixed ... now the low Max232 voltages

From: "Steven R. Bible" <steveb@dandin.com>
Date: Tue, 30 May 2000 18:55:28 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87507-2000.05.30-17.58.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian,

Sorry about the wires pulling loose. The cable I sent you was one that I was evaluating for the kit but we ruled it out because of the punch-down

portion of the connector. With out a punch-down tool, it is too hard to
assemble.

> Thanks for all the suggestions ... now my one last 'problem' is the
> output of the Max232. As I said the V+ and V- are +4.46 and -4.06
> where will this show up as a 'problem?' My display backlite is OK.
> RS232 will work on anything beyond +/- 3V ... how about programming?
>
> What do I check? Pull the Max232 and look for shorted capacitors?
> what?

Double (triple) check that the capacitors are installed correctly (check the
polarity).

Next, are you feeding the T238 better than 8 volts? The 7805 regulator does
not work below 8 volts and you will not get a good 5 volts out of it.

- Steve

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

87. [wxsig] Windows 98 & 1-Wire

From: Paul Womble <pwomble1@tampabay.rr.com>
Date: Tue, 30 May 2000 20:48:46 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87525-2000.05.30-19.46.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will the 1-wire software work with Windows 98? When trying to run
createlist.exe I keep getting an error saying:

"Could not find a DS2407 on the Microlan!"

I know that the adaptor is connected to com1.

This is the initial test after putting together the wx station today.

Thanks
Paul AJ4Y

--
Polk County Amateur Radio Emergency Services:
http://www.qsl.net/polkares
Florida Contest Group:
http://www.qsl.net/fcg

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

88. [wxsig] Re: Windows 98 & 1-Wire

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Tue, 30 May 2000 19:36:39 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87532-2000.05.30-20.39.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Paul Womble wrote:

> Will the 1-wire software work with Windows 98? When trying to run
> createlist.exe I keep getting an error saying:
>
> "Could not find a DS2407 on the Microlan!"
>

Yes, the Dallas Semi 1-Wire software works with Win98. That's what I use
and it has worked fine. I use two programs; the first one is the weather
station software which interfaces with the weather station and gives an
output display with the data as sensed by the weather station. The second
program is the TMEX ibutton viewer program which reads any of the 1-wire
devices and tells you the serial number and other things. Both use the
com ports.

The DS2407 is a switch that is turned on when you want to read the

direction reed switches. If you got that error message with the weather
station software, download the TMEX ibutton viewer software from the
Dallas Semi web site. With the weather station connected to a com port
through a DS9097U, you should see 4 devices: DS1820, DS2407, DS1982,
DS2423 (I know because I just did it).

I noticed from the TMEX ibutton viewer when I was looking at the DS2407
that it has a "hidden mode" feature, but I don't know anything about it
and don't know if that could even cause this type of problem. You might
look through the Dallas documentation for the DS2407 and see what it says.

I will be on travel until Sunday and won't be checking e-mail until then.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

89. [wxsig] Re: Windows 98 & 1-Wire

From: Paul Womble <pwomble1@tampabay.rr.com>
Date: Tue, 30 May 2000 22:06:23 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87536-2000.05.30-21.03.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Using the TMEX ibutton viewer I do see the four devices. But when I run
the weather.exe I still get the same error.

Any ideas?

Thanks
Paul AJ4Y

--
Polk County Amateur Radio Emergency Services:
http://www.qsl.net/polkares
Florida Contest Group:
http://www.qsl.net/fcg

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

90. [wxsig] RE: OK - got it ... damned wiring harness ... fixed ... now the low Max232 voltages

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Tue, 30 May 2000 22:20:03 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87543-2000.05.30-21.20.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "Steven R. Bible" <steveb@dandin.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Tuesday, May 30, 2000 6:55 PM
Subject: [wxsig] RE: OK - got it ... damned wiring harness ... fixed
... now the low Max232 voltages

> Brian,
>
> Sorry about the wires pulling loose. The cable I sent you was one
that I
> was evaluating for the kit but we ruled it out because of the
punch-down
> portion of the connector. With out a punch-down tool, it is too
hard to
> assemble.
>
> > Thanks for all the suggestions ... now my one last 'problem' is
the
> > output of the Max232. As I said the V+ and V- are +4.46 and -4.06
> > where will this show up as a 'problem?' My display backlite is OK.
> > RS232 will work on anything beyond +/- 3V ... how about
programming?

> >
> > What do I check? Pull the Max232 and look for shorted capacitors?
> > what?
>
> Double (triple) check that the capacitors are installed correctly
(check the
> polarity).

 I have checked em about 5 times ... twice during assembly and three
times since I made the bad measurements.

> Next, are you feeding the T238 better than 8 volts? The 7805
regulator does
> not work below 8 volts and you will not get a good 5 volts out of
it.

I am feeding it with the "9 volt 800 ma" wallwart that came with my
PicStart+ ... It measures out about 11.5 volts under the T238 load.
The 7805 is putting out a solid 5.01 volts

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

91. [wxsig] Re: Windows 98 & 1-Wire

From: Paul Womble <pwomble1@tampabay.rr.com>
Date: Tue, 30 May 2000 22:28:48 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87544-2000.05.30-21.26.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

When all else fails...read the instructions.

I was not setting up the com port as comu1.

Thanks
Paul AJ4Y

--
Polk County Amateur Radio Emergency Services:
http://www.qsl.net/polkares
Florida Contest Group:
http://www.qsl.net/fcg

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

92. [wxsig] Stuff

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 30 May 2000 22:09:16 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87552-2000.05.30-23.19.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Is anyone else having problems with the LCD on resets that Steve is
reporting? I am the first to admit that I did not come up with the reset
sequence by following explicit instructions on how to reset the display. I
have looked very hard and cannot find anyone that gives a decent
explanation on how to reset an LCD using only a 4-bit interface. They all
have good 8-bit explanations but fail to explain how if you should write
the full reset control word or half of it. My current code only sends half
of it as that is what appeared to work.

Kyle: Are you thinking of getting the sensor unit and/or display unit
scanned for radiated emissions? We'd surely fail without any shielding.

Brian: My only concern is that the Max chip is either bad or being stressed
to give you voltages that low. You are right that it probably works fine,
but something is amiss, it will almost assuredly come back to bite you
later. I can't really suggest much beyond the basic "check your wiring"
kind of stuff. One way to isolate it may be to isolate all the devices

that can draw power from the chip. This would mean unplugging the LCD, ohming out the contrast adjustment (cuz you can't remove it!) and also disconnecting the two drive lines from the circuit. Disconnecting those lines is pretty easy. Remove the IC from the socket, SLIGHTLY bend out the two drive lines so that when you insert the IC back into the socket those pins go to the outside of the socket. This way you break contact without bending the leads too much. The pins you want to bend out are the two that drive +/- 9V. They are pins 7 and 14. If you have removed all the possible loads on the IC and know the power is good going in, your only option would be a bad IC. Otherwise you can isolate the problem based on which load kills it.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

93. [wxsig] RE: wxsig digest: May 30, 2000

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Wed, 31 May 2000 08:33:58 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87633-2000.05.31-08.37.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes,
I will be scanning and EMI debugging the entire sensor/display when I get the complete kit. I have full access to the lab facilities, but would probably be on an after hours basis. I could do conducted emissions, radiated emissions, ESD and susceptibility (I spare the list of the official IEC standard #'s).

I have not ordered the display kit (just waiting patiently). If your product fails, I will cook up some EMC fixes, but since this is a 'slow' device, I would expect the emissions to be low frequency and easily shielded. By then I will have the attention of the whole gang and we will attack this as a team if need be. Would you guys be interested in doing a D of C or CE mark for this product? Since you don't offer this as a complete system i.e. power pack, there is little concern for product safety. I'm speaking more from the consulting point of view, not that I'm offering our services on a subcontract basis. (our lab is more set up for testing our own in-house engineered headaches) heh, heh.

Offhand, I would say that since this is a plastic cased wad of electronics, you might need shielded interconnect cables (or at least twisted pair conductors) and possibly conductive coating applied to the inside of the sensor housings. At this point it is pure conjecture, but the black-art nature of this work is surprising at times (a *big* reason why I like it so much). The emissions could be low intensity enough to not pose a problem for Class A or B requirements.

I do all the UL/TUV certified lab testing and filing along with some occasional EMC testing if the EMC folks are shorthanded. Our lab is certified to perform testing to meet domestic/international standards. I have 15 years experience messing with it.

A couple wrinkles: 1) I go on a month-long sabbatical in a week and I probably wont be email capable (motorhome/dirtbike in Moab) while roosting in the midwest. 2) I'm not the manager of the department so at best I can only influence activities and the decisions made in our group.

Cheers,

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
LSI Logic Corporation
3718 N. Rock Road

U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

94. [wxsig] Re: Windows 98 & 1-Wire

From: Guy Story <kc5goi@tapr.org>
Date: Wed, 31 May 2000 11:02:49 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87658-2000.05.31-11.05.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Paul, I ran into a simular problem. It took me literally 2 hours to get
it to find all the sensors. I did find that if you use a cable that is
longer than the one supplied, check and make sure it is not crossed (null
modemed). That was part of my problem.

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

95. [wxsig] Re: Windows 98 & 1-Wire

From: "Aaron" <ae4ko@amsat.org>
Date: Wed, 31 May 2000 13:58:03 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87679-2000.05.31-13.00.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Paul, I ran into a simular problem. It took me literally 2 hours to
> get it to find all the sensors. I did find that if you use a cable
> that is longer than the one supplied, check and make sure it is not
> crossed (null modemed). That was part of my problem.
>
> 73,
>
> Guy Story
> KC5GOI
> kc5goi@tapr.org
> http://www.kc5goi.net
>

Also, watch out for those telephone extension couplers (the ones
that let you make a long line out of 2 shorter ones and have an
RJ11 jack on each end) as they will invert the wires and cause
things to not work.

(Random Quote)
Velcro, super glue, duct tape, and post-its! What more do we need?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

June 2000

Original source file: wxsig.0006
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0006

1. [wxsig] Boom Mounts for OneWire Station on Tower

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Thu, 1 Jun 2000 20:10:14 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87929-2000.06.01-19.10.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I cobbled together a quick webpage to show what I have done for tower
mounting the OneWire station. There's a few quick pix and a discussion
of the things I came across in getting ready to put it up 50 feet on a
65 foot tower at 1600 feet AMSL in an area where 80 mph gusts don't
raise an eyebrow.

     http://www.wulfden.org/WXStation

  73 de brian, ka2bqe

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] Catching up

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 1 Jun 2000 21:36:52 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87981-2000.06.01-22.39.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

This weekend will be my weekend to catch up on stuff. I have no specific
assignments, so I hope to catch up on a whole host of domestic duties as
well as weather station stuff.

Steve: I'll do some more poking around for LCDs, hopefully we can scare
something up. No cables either?

Brian: Nice page showing your setup. That is inspiration for me to add
some stuff to my page too!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Re: Lighting sensors.

From: "N4XI" <n4xi@sigecom.net>
Date: Thu, 1 Jun 2000 23:05:35 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-87988-2000.06.01-23.07.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lighting sensors.Kyle...

I have been using an inexpensive EMP sensor ($25-$35) for several years now with my weather server.
Once I get my beta, write the driver to allow it to interface my server, I should have something to add
to the party. If you want more info on the sensor, there is a link on my website:

http://members.sigecom.net/jabennett/wxn

I also have real-time weather data which includes EMP. Of course to see any activity there has to be a storm within about 30 miles. I hope to expand the data to include the four other servers linked to mine soon. One of the nodes is on top of a 20 story high-rise and hears hits out for several hundred miles (depends on propagation).

John Bennett, N4XI
----- Original Message -----
From: Ehler, Kyle
To: TAPR WX Special Interest Group
Sent: Tuesday, May 30, 2000 4:02 PM
Subject: [wxsig] Lighting sensors.

I read something in Circuit Cellar about a year or two ago about a lightning sensor Ciarcia borrowed and tested on their "home run" system. At the time this sensor alone was not cheap ($65 or so) and I checked out the referenced website. At that time the sensor and its patent was up for sale ($4M), the site was in Texas somewhere. I bet that is gone now, and since I don't have the issue with me I cannot provide a precise reference to it. I can dig it up if anyone wants. The company had invented a simple circuit that could detect hit rates at a range of 100 miles or more (if memory serves) without any external antenna elements. The entire sensor package fit into a [large] cigar size tube.

The other here referenced sensors seem to require an external pickup element to extend range. I don't relish tempting fate by giving nature a greater reason or opportunity to strike my electronic abode, or increasing the coupling for RF emissions to disrupt functions.

Something like this would be a plus (imho) for EMC test labs who must monitor RF ambients including lightning during certification scans.

The weather station kit I am assembling could be used on our open air test site (OATS) to provide pre-emptive warning of weather conditions during test. I say "could" because it must first pass emissions testing to check it for acceptable limits of radiation. If this wx device cannot pass or be modified to pass, I get to keep it for my wife's ham shack (KF0ZL)J.

Anybody else interested in this outcome?

Kyle Ehler kyle.ehler@lsil.com
Assistant Design Engineer
(Product Safety and EMC specialist)
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

4. [wxsig] Lighting detectors

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 3 Jun 2000 13:31:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88404-2000.06.03-16.50.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

John B: I saw your nice website. What kind of sensor are you using now? I poked around on your website, but could not find the link. If you are using the sensor we are thinking of, it would be nice to know what you think of it.

Steve: Did you check out any of the other references I found a few weeks back. EIO was one of about four sources. EOI was the cheapest new one, but the All Electronics ones seemed pretty tempting at $6.00 each in quantities of 10:
http://www.allelectronics.com/
Go to catalog page and then select LED/LCD section or...
http://209.250.96.208/led300.pdf
Catalog # LCD-46 No backlight, 1x16 header.
Optrex DMC 20434-CDM $7.00. $6.00 ea in quantities of 10+
Removed from new equipment, large quantity available.
Supertwist, Same part # sells in Digikey for $48.

Today I work on the manual and debugging the code I wrote while in Japan...

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

5. [wxsig] T238 PC Board re-run - reduce board size! et al.

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Sun, 4 Jun 2000 00:17:40 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88439-2000.06.03-23.17.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you are going to re-run the PCBoard for the T-238 I have one
suggestion, reduce the size by .5 inch on length and width. As it is,
the current board just barely fits inside a RatShack project case that
is 6x4x2, but that it, the corners hang up on the screw pylons and it
cannot go down in the case. If you reduce the dimensions by .5 inch
both ways it can be mounted in the 6x4x2 case. I bought a 7x5x3 case
yesterday and its lost in that cavern!!!

  The T-238 is a fine 'development's board and I will want to buy
another one in the future, but I was wondering if there are any plans
for a simplified version of the board with less options; i.e. one
oscillator (get rid of the debug options) a single or double DB9,
slightly smaller breadboard area, etc? I can see all sorts of other
things this could be used for, not the least of which would be get the
weather station onto a smaller more fixed configuration board.

Also, there are so many unused lines even now that we could speed up
the display by going to 8 bit mode on the LCD, though it means
rerouting/reassigning some pins to get it all on one 8 line segment

I am not sure what's being done about the LCDs, but I would be willing
to bet most people would be willing to pay a little more if it meant
getting one with a clean 2x7 pin connector at each end, the 2x7 to
1x16 harness sucks (yes, even if I didn't 'cheat' and get Steve to
wire mine!)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] More On PC Board Mounting

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Sun, 4 Jun 2000 10:27:54 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88533-2000.06.04-09.27.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I took some pictures and compared the two Rat Shack enclosures. I
added them to the quick and dirty page I put together, at the front so
you can see them and not have to wait for the other images too load.
This is definitely a matter of a picture easily being worth beaucoup
words.

    http://www.wulfden.org/WXStation/

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] New firmware and manual

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 4 Jun 2000 13:49:52 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88597-2000.06.04-14.51.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

New manual and firmware are posted on the website:
http://ourworld.compuserve.com/homepages/wmbeals.

I tried posting the manuals but was not able to. There is a (quite
reasonable) 100K limit for postings to this reflector. Please get the
manual from the website. That seems a resonable place for the new object
and source code too.

Russ: I will email you an RTF version of the manual shortly. I really
should get a PDF converter soon that I know everyone can read.

Notable additions in the 1.09.0 release:
  Position string now supported
  Better wind direction error checking
  Multiple Temp sensor support (for people retiring DS1820's without having
to remove them)
  Other way of counter sensors (user picks which sensor is wind and rain)
  Rain error handling (it didn't work in 1.08.2)

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] Up and Running - More Web Pix

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Sun, 4 Jun 2000 21:14:56 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88660-2000.06.04-20.14.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

KA2BQE-3 is up and running in conventional feed to the KPC-3+ via the
RS232 port. I need to do some tricky surgery on the TNC to radio cable
to do the GPS port stuff.

Any I am sending data to the network. My wind data is off a bit. I
need to move the thing another 12 feet higher (from 46 feet to 58-60
feet) there are some trees to one side that definitely seem to be
influencing things.

I took lots more pix and went through and posted more things I found
in the course of getting the whole shooting match up and running as
well as mounted into a case.

       http://www.wulfden.org/WXStation

 Now, on to temp sensor replacements (with the DS18S20) and the rain
gauge!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] RE: Up and Running - More Web Pix

From: "Steven R. Bible" <steveb@dandin.com>
Date: Sun, 4 Jun 2000 21:32:45 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88663-2000.06.04-20.35.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Very Cool Brian!

I'd recommend you place a link to http://www.findu.com/KA2BQE-3 on your web page. Is it really 40 degrees there? Gads, we've been baking here in SE Georgia.

We had a heck of a lightning storm this evening. I rush out and place the rain gauge on the group to watch it work for the first time. I still have my 1-Wire station down since showing it off at Dayton. Alas, we have several power bumps and the rain reset each time. So I need to fix up a UPS for the weather station and computer.

Will, is it possible to make up a lithum battery back up on the T-238 board, say in the proto area? I wonder if a lithum can power only the parts that are needed and not power the LED backlight. And if not a lithum, a couple of AA's?

- Steve, N7HPR

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Brian B. Riley,
> KA2BQE
> Sent: Sunday, June 04, 2000 9:15 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Up and Running - More Web Pix
>
>
> KA2BQE-3 is up and running in conventional feed to the KPC-3+ via the
> RS232 port. I need to do some tricky surgery on the TNC to radio cable
> to do the GPS port stuff.
>
> Any I am sending data to the network. My wind data is off a bit. I
> need to move the thing another 12 feet higher (from 46 feet to 58-60
> feet) there are some trees to one side that definitely seem to be
> influencing things.
>
> I took lots more pix and went through and posted more things I found
> in the course of getting the whole shooting match up and running as
> well as mounted into a case.
>
> http://www.wulfden.org/WXStation
>
> Now, on to temp sensor replacements (with the DS18S20) and the rain
> gauge!
>
>
>
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] Manuals

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 4 Jun 2000 19:45:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88672-2000.06.04-21.20.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Hopefully I have incorporated everyones comments and the latest features in

the latest ops manual. One area of concern is still the assembly manual.
 The only really good way to test it is to assemble another unit. When I
assembled my two units, there were still a few parts missing from the kit,
some hardware was missing, and I have yet to deal with with LCD cable.

Steve: If you can re-send me the instructions on how to assemble the LCD
cable, I'll get them incorporated into the instructions.

I'll also be doing some more website updates. I just threw in the
firmware/manual updates this morning and would like to add some more useful
content to it. Seeing Brians website has inspired me to add some more
content to my own.

All: Any more staitons on the air? I checked the list on my website and
have 3/5 with data.

Kyle: I think our biggest EMI concern is going to be RF getting into the
box instead of RF getting outside the box. At Steve's suggestion, we have
ferrites on all the signals that egress from the box in an attempt to keep
RF from getting in and messing up the electronics. If we do get a metal
case (something I think Steve is considering), then we should be pretty
bulletproof in terms of RF getting in or out. Sounds like a cool trip to
Moab that you are getting ready for. Fortunately, as a kit we don't have
to worry about passing any kind of FCC certification. I work in consumer
electronics too and know all to well the fun part of trying to get past FCC
specs (UL too) without after the design is complete and then under pressure
to not add anything to the cost of the product to meet FCC.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Install notes

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 4 Jun 2000 20:39:51 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88682-2000.06.04-22.21.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

Brian: WAIT!! Don't remove the old DS1820 yet. I'd like to get someone
to confirm my new dual temperature sensor code works. The 1.09.0 release
now looks for two temperature sensors. If it finds two, it will present
you with both IDs and ask you which to choose for your outdoor sensor. The
other is just ignored. No surgery needed.

Brian: Is it OK if I put a link to your website on my reference page as
well as your callsign in my table of folk that are up and running (and
visible on Apparent).

Steve: The idea of a backup battery has been tempting, but with any luck
it won't be needed soon. After I get past this 1.09.x release set, the
1.10 set will add the DS1994 to my repetiour. That neat little bugger has
a bunch of battery-backed SRAM in it that I intend to use for data logging
and the ability to transfer that data to a PC. The little bugger also has
a real-time clock (sortof) that I can use. That way if power is
interrupted, when it comes back I will be able to read the latest stats,
fix the clock, and continue on as normal. I've been wanting to play with
that device for quite a while now, but wanted to get more of the basic
stuff taken care of first. I'll be there after I get metric support added
and fix any bugs that folk find in this release.

will

```
------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

12. [wxsig] RE: Up and Running - More Web Pix

```
From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 5 Jun 2000 00:13:14 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88686-2000.06.04-23.16.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
----- Original Message -----
From: "Steven R. Bible" <steveb@dandin.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, June 04, 2000 9:32 PM
Subject: [wxsig] RE: Up and Running - More Web Pix


> Very Cool Brian!
>
> I'd recommend you place a link to http://www.findu.com/KA2BQE-3 on
your web
> page.  Is it really 40 degrees there?  Gads, we've been baking here
in SE
> Georgia.

 Well it was in the 50's most of the day and then about 1630r we had a
shower and the sun came out and it went up to 65, then plummetted to
37 in a matyter of an hour ... it has now 'warmed' up to 40!

> We had a heck of a lightning storm this evening.  I rush out and
place the
> rain gauge on the group to watch it work for the first time.  I
still have
> my 1-Wire station down since showing it off at Dayton.  Alas, we
have
> several power bumps and the rain reset each time.  So I need to fix
up a UPS
> for the weather station and computer.

  I have among my faults this arrogance about not having to worry
about that stuff, being totally off the grid (my only 'connection' is
the phone line) its just not a problem I deal with.

> Will, is it possible to make up a lithum battery back up on the
T-238 board,
> say in the proto area?  I wonder if a lithum can power only the
parts that
> are needed and not power the LED backlight.  And if not a lithum, a
couple
> of AA's?

 You could simply place a switch in the LCD backlight line and leave
it off except when you need to see the display. That drops the current
drain from a little under 600 ma to 300 ma.

 73 de brian



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

13. [wxsig] Re: Install notes

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Mon, 5 Jun 2000 00:19:10 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88687-2000.06.04-23.22.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, June 04, 2000 10:39 PM
Subject: [wxsig] Install notes

> All:
>
> Brian: WAIT!! Don't remove the old DS1820 yet. I'd like to get someone
> to confirm my new dual temperature sensor code works. The 1.09.0 release
> now looks for two temperature sensors. If it finds two, it will present
> you with both IDs and ask you which to choose for your outdoor sensor. The
> other is just ignored. No surgery needed.

I wasn't planning to remove it, I thought the 1.08 code had that in place (I am still on 1.06. I downloaded 1.09 code tonite (at least I hope I did, it was still labbelled WX08!!!)

> Brian: Is it OK if I put a link to your website on my reference page as
> well as your callsign in my table of folk that are up and running (and
> visible on Apparent).]

  Sure go ahead. Butttt my vanity request for N1BQ should be granted in the next 2-4 days if I have it figured right. Look for a callsign change.

> Steve: The idea of a backup battery has been tempting, but with any luck
> it won't be needed soon. After I get past this 1.09.x release set, the
> 1.10 set will add the DS1994 to my repetiour. That neat little bugger has
> a bunch of battery-backed SRAM in it that I intend to use for data logging
> and the ability to transfer that data to a PC. The little bugger also has
> a real-time clock (sortof) that I can use. That way if power is
> interrupted, when it comes back I will be able to read the latest stats,
> fix the clock, and continue on as normal. I've been wanting to play with
> that device for quite a while now, but wanted to get more of the basic
> stuff taken care of first. I'll be there after I get metric support added
> and fix any bugs that folk find in this release.

 This is great - one of the real bitches about the last 48 hours with this thing is the damned setup every time I made some change .....

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] RF, T-238, and One-Wire.

From: "Brian B. Riley, KA2BQE" <ka2bqe@amsat.org>
Date: Mon, 5 Jun 2000 07:42:24 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88746-2000.06.05-06.45.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ok ... I am up and running and now realize I need to move the wind gauge further up the tower. My APRS antenna is a single element dipole beam mounted vertical on a tower leg at about 56 feet on the tower. Just how close, physically can I get to it with the unit. Right now

its about 12 feet below and 6 feet to one side of it. I want to move
it up 6-8 feet so the actual separation will be about seven feet
partially shadowed by tower structure ... anybody see any problems?

 73 de brian, ka2bqe

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] RE: wxsig digest: June 04, 2000

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Mon, 5 Jun 2000 08:39:37 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88793-2000.06.05-08.43.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Snipped for brevity:
------- start
Kyle: I think our biggest EMI concern is going to be RF getting into the
box instead of RF getting outside the box. At Steve's suggestion, we have
ferrites on all the signals that egress from the box in an attempt to keep
RF from getting in and messing up the electronics. If we do get a metal
case (something I think Steve is considering), then we should be pretty
bulletproof in terms of RF getting in or out. Sounds like a cool trip to
Moab that you are getting ready for. Fortunately, as a kit we don't have to
worry about passing any kind of FCC certification. I work in consumer
electronics too and know all to well the fun part of trying to get past FCC
specs (UL too) without after the design is complete and then under pressure
to not add anything to the cost of the product to meet FCC.
will
------- end

Wow! This is starting to roll now...great stuff!!
Heh, heh, Will, you know about the inverted nature of EMC fixes on
products....

The susceptibility testing I can run in the lab ranges in frequency from
80Mhz to 1Ghz at 3V/m. Methinks the field strength most hams will generate
at proximity's to the wx will greatly exceed 3V/m. Our lab's equipment is
not capable of more field strength and uniformity at the high end
frequencies and at the 2, 10, and 40 meter freq's it is an unknown how much
is possible so there will be Grey zones (more like holes) in testing
coverage. In this case, results will be unpredictable. As I said, shielded
cables may be the order of the day, but since the wx is a two wire bus
device, we might have the luxury of using RG coax as signal carrier. (this
is just a suggestion)
My wife and I just re-entered the ham scene (just picked up a PILE of new
Yaesu stuff) and we are not quite up to speed with a shack. Some of you
guys that are established might take the point by placing a wx on your TX
tower and keying up across the band to see just what happens. This could
provide some pre-emptive idear of what we are up against. I bet a couple
scrawny ferrites (prayer beads) won't stop the washout...

While on Sabbatical I will be out of reach.
T-minus 57:17:00 hrs to ignition...

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

> -----Original Message-----
> From: TAPR WX Special Interest Group digest
[mailto:wxsig@lists.tapr.org]
> Sent: Monday, June 05, 2000 12:01 AM
> To: wxsig digest recipients
> Subject: wxsig digest: June 04, 2000
>
> TAPR WX Special Interest Group Digest for Sunday, June 04,
2000.
>
> 1. More On PC Board Mounting

2. New firmware and manual
3. Up and Running - More Web Pix
4. RE: Up and Running - More Web Pix
5. Manuals
6. Install notes
7. RE: Up and Running - More Web Pix
8. Re: Install notes

---

16. [wxsig] Re: RF, T-238, and One-Wire.

From: Ray Vaughan <ray@rayvaughan.com>
Date: Mon, 05 Jun 2000 10:38:25 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88818-2000.06.05-09.41.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

FWIW, I think the NWS standard for monitoring stations is 30' above ground level. If you go too high, you'll get too much wind. Stop by a local weather office and see how they have theirs set up. I think they usually mount on the side of a tower with maybe a 5' offset from the tower.

At 07:42 AM 6/5/00 -0400, you wrote:
> Ok ... I am up and running and now realize I need to move the wind
>gauge further up the tower. My APRS antenna is a single element dipole
>beam mounted vertical on a tower leg at about 56 feet on the tower.
>Just how close, physically can I get to it with the unit. Right now
>its about 12 feet below and 6 feet to one side of it. I want to move
>it up 6-8 feet so the actual separation will be about seven feet
>partially shadowed by tower structure ... anybody see any problems?
>
> 73 de brian, ka2bqe

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

17. [wxsig] Re: RF, T-238, and One-Wire.

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 5 Jun 2000 15:50:53 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88882-2000.06.05-14.54.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "Ray Vaughan" <ray@rayvaughan.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, June 05, 2000 10:38 AM
Subject: [wxsig] Re: RF, T-238, and One-Wire.

> FWIW, I think the NWS standard for monitoring stations is 30' above
ground level. If you go too high, you'll get too much wind. Stop
by a local weather office and see how they have theirs set up. I
think they usually mount on the side of a tower with maybe a 5' offset
from the tower.

I am trying to clear some trees ... I have it on a 3.3 foot offset.

> At 07:42 AM 6/5/00 -0400, you wrote:
> > Ok ... I am up and running and now realize I need to move the
wind
> >gauge further up the tower. My APRS antenna is a single element
dipole
> >beam mounted vertical on a tower leg at about 56 feet on the tower.
> >Just how close, physically can I get to it with the unit. Right now
> >its about 12 feet below and 6 feet to one side of it. I want to
move
> >it up 6-8 feet so the actual separation will be about seven feet
> >partially shadowed by tower structure ... anybody see any problems?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] Barometer for T238

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 5 Jun 2000 21:34:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88934-2000.06.05-21.35.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

I just joined the reflector and haven't had a chance to read the manual yet,
so forgive me if I am going over old material.

I am working on a prototype for a "1-Wire" barometer based on the Motorola
MPX4115A pressure sensor and a Dallas Semiconductor 1-Wire DS2450 D/A
converter.   I am not a glutton for punishment, but after looking at the
$$$ for a commercial unit I think I can make something that will meet my
performance needs for a lot less.

Will the T-238 have enough flexibility to add other 1-Wire components? It
looks like the MPX4115A has about a 4.5V range if I read the specs
correctly. I intended on polling the Voltage from the DS2450 and creating
an algorythm to convert the value to barometric pressure.

Am I crazy?

Rich Beckwith WN0X

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

19. [wxsig] Re: Barometer for T238

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 05 Jun 2000 21:37:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88937-2000.06.05-22.41.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich Beckwith wrote:

> I am working on a prototype for a "1-Wire" barometer based on the Motorola
> MPX4115A pressure sensor and a Dallas Semiconductor 1-Wire DS2450 D/A
> converter.   I am not a glutton for punishment, but after looking at the
> $$$ for a commercial unit I think I can make something that will meet my
> performance needs for a lot less.

Dallas Semiconductor is developing barometric and humidity sensors for the
1-Wire weather station. Originally, they had planned to do the barometric unit
first, but some problems arose with the pressure transducer and this has caused
some delay. However, the humidity sensor is coming along in good shape and was
to have been available about the end of July. Just today I wrote to Dan Awtrey
of Dallas Semiconductor and asked about the humidity sensor write up that was to
have been in this month's Sensor Magazine. Here's the reply.

> Subject: RE: Humidity sensor & Sensors Magazine
>
> Hi Russ,
>
> It's a sad thing, I received an email from Sensors only a short time
> ago that the article was being displaced by a sponsor. Another
> tentative publication date was set for July.
>
> We had hoped to have the humidity sensor and the new software
> available by the end of July, but there have been some last minute
> changes to both. I haven't heard how this will impact the release.
>
> I don't recall if I've provided it before, but the schematic for the
> humidity sensor is attached for your convenience.
>
> Regards,
>
> Dan Awtrey   Staff Engineer
> Dallas Semiconductor   Phone: 972-371-6297
> Building C   FAX: 972-371-3715
> 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> Dallas, TX 75244-3292

> http://www.ibutton.com
>

We plan on adding support to the T238 for both the humidity sensor and the
barometric sensor as soon as they become available.

Russ
kb0tvj
[Attachment: Humid38.doc; application/msword; 23,552 bytes]

20. [wxsig] Replies

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 5 Jun 2000 22:03:44 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88940-2000.06.05-23.05.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Brian: My only experiece with cabling and RF is my 14GHz satellite uplink
transmitter. Much to my surprize, no problems. I think anyone
experimenting with RF around the weather station is breaking new ground.
 Let us know!

Kyle: It will be interesting to see what you find. You may want to wait
until we get a case though, as suceptibility will likely be pretty nasty
until then.

Rich: I have not started any work on a barometric pressure sensor yet, it
is one of the things that I would like to have eventually though. Clearly
cheap (and accurate) is a pretty strong requirement for any sensor for this
project. Absolutely the project is expandable for future sensors as they
come up. I have some data logging firmware to write next and after that am
not sure which kind of sensor is next. If needed, we do have a dedicated
+5V power line going up the cable in addition to the 1-Wire signal and
ground. Permanently powering a sensor is possible if necessary. Some folk
on the Dallas [weather] reflector are concerned about additional
capacitance on this line, but hopefully it will be OK.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] Power over 1-Wire bus

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Mon, 05 Jun 2000 22:06:13 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-88949-2000.06.05-23.09.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here's some information about supplying power over the 1-Wire bus. Also
has a schematic for a 1-Wire barometer.

> -----Original Message-----
> From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> Sent: Wednesday, May 31, 2000 3:53 PM
> To: 'weather@ibutton.com'
> Subject: [weather] Light up your weather station
>
> An article describing how to supply power on the 1-Wire net has been
> posted on the weather station homepage at
> http://www.ibutton.com/weather/index.html. The article discusses
> several methods of tapping the power available whenever the DATA line
> is in the quiescent logic high state.
> One possibility shown in Figure 1, is to tap the power available above

> 3.0V to power one of the new VERY high output LEDs since they have a
> forward voltage exceeding 3.25V depending upon the wavelength chosen.
> Made by Nichia (http://www.nichia.com/) they are available from B.G.
> Micro on their LMAD (Let's make a deal) page at
> http://www.bgmicro.com/lmad.htm
> Using the method shown in Figure 1, one or more of the LEDs can be
> used as illumination or strobes for the weather station. Note that the

> LEDs can be mounted so that they illuminate both the case and the wind

> cups for an interesting lighting effect. This can be very beneficial
> for those of you who have mounted your weather station on the tallest
> structure around and have aircraft in the area ;).
> Other more sophisticated methods in the article describe how to
> accumulate the low level energy available on the 1-Wire net and
> release it as a high power burst and even regulate the output voltage.

> Regards,
>
> Dan Awtrey Staff Engineer
> Dallas Semiconductor Phone: 972-371-6297
> Building C FAX: 972-371-3715
> 4401 S. Beltwood Pkwy. E-mail: dan.awtrey@dalsemi.com
> Dallas, TX 75244-3292
> http://www.ibutton.com
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

22. [wxsig] Calibration - sensor IDs

From: Hosking William-P05328 <Bill.Hosking@motorola.com>
Date: Tue, 6 Jun 2000 13:02:17 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89159-2000.06.06-15.05.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,
While sitting here patiently(??) awaiting kit deliveries next month, I
downloaded the operation manual and read through it.

I have a fully operational wind/temp/rain (1-wire) installed and working
just fine with the Dallas software. Since I live in Arizona where mid day
temps on roof can easily be over 115deg the thought of taking it down to
calibrate with your system didn't exactly turn me on. However, in further
reading I see you have put in the capability of restoring the ID variables
in the Wireids module. I had just about figured out I would have to
reassemble the code & how to make the changes to avoid a roof trip when I
read your change description for version 1.09

Your two added user options - do those take of all the processor IDs or just
the rain add-on? I'm a little confused (also that is a 2nd part of roof
trip, since rain gauge is already installed.

Thanks
Bill W7JSW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Importing IDs

From: William Beals <wmbeals@compuserve.com>
Date: Tue, 6 Jun 2000 20:11:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89224-2000.06.06-21.15.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

Having got up to 100 today, the thought of being on the roof isn't too
appealing to me either. Importing sensor IDs for all but wind direction
would be pretty easy as I believe they are fairly uniquely identified in
the setup file the Dallas software uses. Wind direction is a bit nasitier
as I do not know how the Dallas stores those IDs. For my flash contents,

the first ID (fidir1:) represents just the first ID that I found, then all
subsequent IDs represent the order in which the IDs were discovered in
increasing angle order. The flash variable fwdoff represents the offset to
get your 0-degree reference (see below for how)

When the wind direction routine goes and gets the wind direction, it goes
and finds a min and max ID value. For each reading, I get an index value
(0-7) depending on which sensor is found. If only one sensor is activated,
I get the same reading twice (1,1; 2,2). If two sensors are activated, I
get both (1,2; 7,8, etc) By adding these two numbers together I get a
reading of 0-15 representing each of the possible 16 readings for wind
direction. A reading of 0,7 or 7,0 is a special case that needs to be
converted to 15.

I then add the offset value to that index, modulo divide anything over 16
to get the wind direction index where 0=0 degrees, 1=22.5 degrees, etc.

If you are aware of the details on how the Dallas folk store their indexes,
hopefully you can corrolate their data format to my above explanation.
 When you do figure it out, that would make a handy app note for future
folk. I'll help with any more questions you have.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] Re: Barometer for T238

From: "Rich Beckwith" <wn0x@earthlink.net>

Date: Tue, 6 Jun 2000 16:55:24 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89307-2000.06.07-08.57.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks Russ,

I talked with DalSemi today to verify production of the Barometer/Humidity
sensor.   There will likely be component changes to the barometric pressure
sensor unit which would entail a software change, and delay production.
This is why the humidity sensor will be available first.

I will be experimenting with the DS2438 (Smart Battery Monitor) and Motorola
MPX4115A pressure sensor and see what my results are. I plan on querying
the voltage detected by the DS2438 and use an algorithm to convert it to
barometric pressure. As far as I know, this will be the same methodology
used for the BP sensor from Dallas. The design is based on the BP sensor
schematic available on the DalSemi web site at
http://www.ibutton.com/weather/parapwr2.pdfwhich which uses the DS2450 A/D
converter.

I hope this will keep my BP sensor compatible with the T238 when the
production BP sensor is available.

BTW, check out the DS2438 when you get a chance. A really cool device that
includes among other things a Temperature Sensor, A/D converter, Current
Accumulator, Elapsed time meter and 40 bytes of nonvolatile memory. Cool!

Rich Beckwith - Wn0x

>
>> I am working on a prototype for a "1-Wire" barometer based on the

Motorola
>> MPX4115A pressure sensor and a Dallas Semiconductor 1-Wire DS2450 D/A
>> converter.   I am not a glutton for punishment, but after looking at the
>> $$$ for a commercial unit I think I can make something that will meet my
>> performance needs for a lot less.
>
>Dallas Semiconductor is developing barometric and humidity sensors for the
>1-Wire weather station. Originally, they had planned to do the barometric
unit
>first, but some problems arose with the pressure transducer and this has
caused
>some delay. However, the humidity sensor is coming along in good shape and
was
>to have been available about the end of July. Just today I wrote to Dan
Awtrey
>of Dallas Semiconductor and asked about the humidity sensor write up that
was to
>have been in this month's Sensor Magazine. Here's the reply.
>
>> Subject: RE: Humidity sensor & Sensors Magazine
>>
>> Hi Russ,
>>
>> It's a sad thing, I received an email from Sensors only a short time
>> ago that the article was being displaced by a sponsor. Another
>> tentative publication date was set for July.
>>
>> We had hoped to have the humidity sensor and the new software
>> available by the end of July, but there have been some last minute
>> changes to both. I haven't heard how this will impact the release.
>>
>> I don't recall if I've provided it before, but the schematic for the
>> humidity sensor is attached for your convenience.
>>
>> Regards,
>>
>> Dan Awtrey   Staff Engineer
>> Dallas Semiconductor   Phone: 972-371-6297
>> Building C   FAX: 972-371-3715
>> 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
>> Dallas, TX 75244-3292
>> http://www.ibutton.com
>>
>
>We plan on adding support to the T238 for both the humidity sensor and the
>barometric sensor as soon as they become available.
>
>Russ
>kb0tvj
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] Any feedback?

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 8 Jun 2000 22:12:48 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89657-2000.06.08-23.14.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Anybody finding any bugs in the 1.09.0 Release? So far it is working
pretty good for me, but since I don't really have access to my outdoor
sensor station, I can only stress the software with my indoor station.

All: I'll be bringing up a new website for the weather station project.
 The address is tentatively set to a much shorter http://www.beals5.com/wx.
 It isn't quite fully working yet, but will be there soon. I will keep
both websites up to date for now, but the intention is to transition over
to the new site eventually.

will

```
-------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
-------------------------------------------------------------
Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

26. [wxsig] upgrading - realigning

```
From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Fri, 9 Jun 2000 16:35:51 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89831-2000.06.09-15.38.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have 1.0.6.1 running on the T-238 ... I want o upload 1.09 ... does
that mean I need to re-run the sensor alignment for wind direction ???

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

27. [wxsig] Re: upgrading - realigning

```
From: "Aaron" <ae4ko@amsat.org>
Date: Fri, 9 Jun 2000 17:21:17 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89845-2000.06.09-16.23.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I have 1.0.6.1 running on the T-238 ... I want o upload 1.09 ... does
> that mean I need to re-run the sensor alignment for wind direction ???
>
> --
>   Brian B. Riley, N1BQ   (ex-KA2BQE)
>    <http://www.wulfden.org>


No, the code area is updated and the area that stores the sensor
data (among others) is left intact.

I'm hoping to test the new code this weekend...

73

---
(Random Quote)
The hardest years are between 10 and 70.


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

28. [wxsig] Re: upgrading - realigning

```
From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Fri, 9 Jun 2000 17:37:18 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89848-2000.06.09-16.39.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "Aaron" <ae4ko@amsat.org>
```

Sent: Friday, June 09, 2000 5:21 PM
Subject: [wxsig] Re: upgrading - realigning

> > I have 1.0.6.1 running on the T-238 ... I want to upload 1.09 ...
does
> > that mean I need to re-run the sensor alignment for wind direction
???
>
> No, the code area is updated and the area that stores the sensor
> data (among others) is left intact.

   .... yesss!! there is a God, and He is compassionate! (Brian with
the shot up knees and a tall tower!)

p.s. wx.findu.com lost its DNS today again! in the future anyone
wanting to find weather stuff when this happens can use

<http://64.34.101.121/cgi-bin/wxpage.cgi?call=n1bq-3&last=120>

Just put your call/ssid in place of mine. I bookmarked it as well!

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] Wx station enclosure

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Fri, 09 Jun 2000 19:42:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89884-2000.06.09-20.47.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a picture of enclosure that I made for the T238 board. It's
made out of a stock 6"x4"x3" aluminum box. One half is a light blue and
the other half is a light tan. The LCD is 3 7/8 " and fits nicely in
the 4" width. I could have use 2" high rather than 3" but couldn't find
any. The screws to hold the LCD are 3x46 and there are several washers
inside the case to space the LCD back inside the case.

Russ
kb0tvj
[Attachment: wxcase1.JPG; image/jpeg; 60,403 bytes]

30. [wxsig] Wx station enclosure - 2nd picture

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Fri, 09 Jun 2000 19:51:18 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89886-2000.06.09-20.55.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a picture of the enclosure with the back cover removed. You can
see that the T238 is held in place with the 6X32 threaded rod through
each of the holes in the corner of the board. This allows you to
position the height of the board by the two nuts on each of the threaded
rods. Also gives plenty of lateral stability. When you connect or
disconnect the DB-9, the board doesn't move at all.

The case cost $14.50 and is made out of 1/16 aluminum that has a baked
on enamel. The four buttons are on the front along with a switch to
turn the back light on and off.

Russ
kb0tvj
[Attachment: wxcase2.JPG; image/jpeg; 50,048 bytes]

31. [wxsig] what assembler

From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Sat, 10 Jun 2000 00:05:07 -0400

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89898-2000.06.09-23.07.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am going to need to hack the code to add a menu selection and
sequence to set the 5 minute TNC summary down to 2400 baud and remove
the TNC commands in order to try and interface to the firmware GPS
port on the KPC-3+ ... which assembler should I get. I picked up the
free IDE from PE Micro - will that work? or do I need to get the
Motorola one?

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] Lightning Detectors ?

From: gsawyer <gsawyer@dove.net.au>
Date: Sat, 10 Jun 2000 14:29:24 +0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89922-2000.06.10-00.06.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anyone looked at the "new" Lightning detector at
www.stormwise.com ? this * MAY * have an application
in the overall scheme of things.

 I posted a general (@WW) bulletin on the packet network last
week, but have heard no feedback at this point in time.

 Until now I have been using an Electrostatic method of detection -
basically a F.E.T attached to a short (P.C.B foil) "antenna" of
about 1 foot (300mm) in length, this provides an indication of
nearby - and often distant, Cloud to Ground discharges, but maybe
an ElectroMagnetic solution might be better - your thoughts please ?

 Glenville VK5ZCF

Glenville T. Sawyer
Alternative Energy Experimenter, Amateur Radio Operator
              http://www.gsawyer.mtx.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

33. [wxsig] Re: what assembler

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Sat, 10 Jun 2000 06:44:42 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89944-2000.06.10-07.48.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:

> I am going to need to hack the code to add a menu selection and
> sequence to set the 5 minute TNC summary down to 2400 baud and remove
> the TNC commands in order to try and interface to the firmware GPS
> port on the KPC-3+ ... which assembler should I get. I picked up the
> free IDE from PE Micro - will that work? or do I need to get the
> Motorola one?
>

Brian,

Will is out of town for most of this weekend installing a satellite dish
at his folk's home in the mountains. He can provide an answer to your
question (I can only provide an uninformed guess :) He will be back late
Sunday afternoon.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

34. [wxsig] Second Port Support

From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Sat, 10 Jun 2000 13:07:22 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-89998-2000.06.10-12.09.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

... well it seems that Will put the support for the KPC-3+ firmware
GPS port into 1.09.0, but it is at 4800 baud ... Kantronics suggests
that, even though they support 4800 baud, that data may be dropped if
its a busy channel. They recommend 2400 baud and say no data should be
lost if the firmware uart is clocked at 2400 bd.

Yo Will ... ya hear that?????

--
Brian B. Riley, N1BQ (ex-KA2BQE)
<http://www.wulfden.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

35. [wxsig] Re: Lightning detectors

From: "N4XI" <n4xi@sigecom.net>
Date: Sat, 10 Jun 2000 12:26:35 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90003-2000.06.10-12.28.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, June 03, 2000 2:31 PM
Subject: [wxsig] Lightning detectors

> John B: I saw your nice website. What kind of sensor are you using now?
> I poked around on your website, but could not find the link. If you are
> using the sensor we are thinking of, it would be nice to know what you
> think of it.

Hi William Beals. Sorry to be long in getting back to you. My father is
not doing well in a nursing home, and my time is rather limited at the
present.

>From my home page, go the third link up from the bottom (links to
manufacturers). The Stormwise link is at the bottom of the page. I just
checked to make sure it was working. They have come up with some new
goodies which might prove to be interesting.

73, John

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

36. [wxsig] RE: Up and Running - More Web Pix

From: "N4XI" <n4xi@sigecom.net>
Date: Sat, 10 Jun 2000 12:34:13 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90005-2000.06.10-12.35.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve...

Weather stations losing rain gauge readings is a common problem. Haven't worked with one yet that I didn't have to deal with this. The best solution was in the software itself. However, since the units are standalone (and therefore don't have a floppy or HD to load from), might want to consider putting some EEPROM on the board. You may already have this. The fix is only a few lines of assembly code.

With this thing with my father on-going, I just haven't had time to do very much in prep for the beta unit.

73, John

----- Original Message -----
From: "Steven R. Bible" <steveb@dandin.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, June 04, 2000 8:32 PM
Subject: [wxsig] RE: Up and Running - More Web Pix

> Very Cool Brian!
>
> I'd recommend you place a link to http://www.findu.com/KA2BQE-3 on your web
> page. Is it really 40 degrees there? Gads, we've been baking here in SE
> Georgia.
>
> We had a heck of a lightning storm this evening. I rush out and place the
> rain gauge on the group to watch it work for the first time. I still have
> my 1-Wire station down since showing it off at Dayton. Alas, we have
> several power bumps and the rain reset each time. So I need to fix up a UPS
> for the weather station and computer.
>
> Will, is it possible to make up a lithum battery back up on the T-238 board,
> say in the proto area? I wonder if a lithum can power only the parts that
> are needed and not power the LED backlight. And if not a lithum, a couple
> of AA's?
>
> - Steve, N7HPR
>
>
> > -----Original Message-----
> > From: bounce-wxsig-15059@lists.tapr.org
> > [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Brian B. Riley,
> > KA2BQE
> > Sent: Sunday, June 04, 2000 9:15 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Up and Running - More Web Pix
> >
> >
> > KA2BQE-3 is up and running in conventional feed to the KPC-3+ via the
> > RS232 port. I need to do some tricky surgery on the TNC to radio cable
> > to do the GPS port stuff.
> >
> > Any I am sending data to the network. My wind data is off a bit. I
> > need to move the thing another 12 feet higher (from 46 feet to 58-60
> > feet) there are some trees to one side that definitely seem to be
> > influencing things.
> >
> > I took lots more pix and went through and posted more things I found
> > in the course of getting the whole shooting match up and running as
> > well as mounted into a case.
> >
> >   http://www.wulfden.org/WXStation
> >
> > Now, on to temp sensor replacements (with the DS18S20) and the rain
> > gauge!
> >
> >
> >
> >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: srbible@gate.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >

> >
>
>
> ---
> You are currently subscribed to wxsig as: n4xi@sigecom.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] Modificataions to Firmware 1.09.0 --> 1.09.1

From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Sat, 10 Jun 2000 15:56:25 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90032-2000.06.10-14.59.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I downloaded the free WinIDE from PE Micro

     <http://www.pemicro.com/ics08/>

The file is called

     ics08gpz_version_1_32A.exe

It is more than just the In Circuit Simulator, it is a complete
development environment. Despite being billed as an 'upgrade package'
it is the whole enchilada. You do still need to go to DOS and use
MON08 to download. I do not think the PEMicro downloader will work -
it appears to be made for the development board and I would assume
their loader. I have not tried yet, though

Nice going Will ... the source assembles clean as a whistle under PE
Micro.

I went in and changed the routine for the TNC LTP mode which is
identical to the TNC Direct mode sans the TNC management (ctrlC, MON
OFF, "WX Start", and CONV) to initialize at 2400 baud. In keeping with
Kantronics warning that despite them enabling a firmware (read that as
'bit-banger') GPS Port as high as 4800 baud that they feel a busy
channel will cause data loss on the GPS Port and that at 2400 baud
there is no reasonable expectation of any data loss.

I have enclosed a Zip file with the changed modules and an S19 file
which I have unofficially dubbed 1.09.1 (Will feel free to override
this) The code changes are exclusively in UART.ASM to the "sbaud"
routine. (Will, very nicely structured code, the changes were
consequently relatively trivial to make) there were comment changes in
several others and I changed the version number to 1.09.1 in
TABLES.ASM

My only comments on 1.09.x so far is that the display seems dim to the
point of being unreadable on some screens and not others. On some
screens the 1st and 3rd lines are bold and the 2nd and 4th are dime
and vice-versa. This started when I downloaded the original 1.09.0
and persisted in 1.09.1

My next challenge is to hack the display code to put a clock on the
main data display page.

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>
[Attachment: WXSRC091.zip; application/x-stuffit; 46,874 bytes]

38. [wxsig] Back from the mountains

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 11 Jun 2000 22:48:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90309-2000.06.11-23.51.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I was off communing with nature--and installing a satellite dish this

weekend.

Brian: As long as you just download new code using MON08, you should be
able to keep all your settings. If I did things right, even as new
features get added, unprogrammed flash should result in new features
disabled until you turn then on (like the position string). For folk (like
you) that want to mess with new code, you will need to take your settings
and plunk them into the wireids.asm file so they can be restored once you
erase the entire flash to download new code. BTW: as long as you do not
change the monitor, you can download your new code using MON08 and not have
to mess with the IDs.

Russ: Nice looking enclosure! I need to get moving on mine.

Brian: Looks like you were told about the TNC-LTP mode. Since that mode
was intended for exactly what you are trying to do. I don't have that rev
of fimware and just based the settings on what I read from Kantronic's
website. I will change the official code to 2400 baud soon.

Glen: I last looked at stormwise's website a couple weeks ago. New stuff
is usually better, I'll take a look tomorrow night hopefully.

John: As always, family stuff should take priority. I suspected it was
stormwise, I guess I didn't find the link like I should have.

John: The rain guage from Dallas has a battery backup, so hopefully it
will be reasonably reliable. Time will tell of course. If only I could
get some rain to better test the thing. Dry as a bone here.

Brian: Thanks for the nice words about the source code. For now I want to
be in control of the releases, only because I have no idea how to maintain
control over the source unless I am the single person responisble for
releases. I will incorporate your changes for the TNC-LTP mode. Getting
the current time into the status page will involve tossing something else,
so for now I'll leave you on your own for that one. Can I suggest you use
a different letter for any mods you make. For example, call your release
1.09.1B (for Brian). I'll use only C and R for candidate and Relese
versions. BTW: What format was that attachment in. I don't know what the
.sit file extension is.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] Bandwidth Help

From: Hosking William-P05328 <Bill.Hosking@motorola.com>

Date: Mon, 12 Jun 2000 06:37:18 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90412-2000.06.12-08.40.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks, when you respond to a long posting, PLEASE snip out most of the
original posting.

An example - Someone sent a code listing which, with my mail system results
in 6 to 8 pages of gibberish text. That one is ok, it's life. What really
jams up the bandwidth was the other four responses which included the whole
thing again, four times.

Thanks
Bill W7JSW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Re: Lightning Detectors ?

From: David Fullmer <fullmer@tera.com>
Date: Mon, 12 Jun 2000 09:16:36 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90480-2000.06.12-11.19.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you like 'rolling your own', and you're feeling a bit ambitious, you
might want to check out:

http://kato.theramp.net/sferics

While this project was intended for detecting severe weather formations,
it will work as a very sensitive lightning detector. I'm looking at
building one of these and turning down the gain just a bit so it won't
be overloaded by storms that are near. The added advantage of this
system is that you can detect all lightning strokes, not just cloud to
ground. It also gives you the direction to the stroke. There is a
version of the software/firmware that the author is playing around with
that'll give an approximate distance (based on signal strength). He's
still fine tuning that and will be posting it when he's done. Good
luck....

- Dave -

gsawyer wrote:
>
> Has anyone looked at the "new" Lightning detector at
> www.stormwise.com ? this * MAY * have an application
> in the overall scheme of things.
>
> I posted a general (@WW) bulletin on the packet network last
> week, but have heard no feedback at this point in time.
>
> Until now I have been using an Electrostatic method of detection -
> basically a F.E.T attached to a short (P.C.B foil) "antenna" of
> about 1 foot (300mm) in length, this provides an indication of
> nearby - and often distant, Cloud to Ground discharges, but maybe
> an ElectroMagnetic solution might be better - your thoughts please ?
>
> Glenville VK5ZCF
>
> ----------
> Glenville T. Sawyer
> Alternative Energy Experimenter, Amateur Radio Operator
>   http://www.gsawyer.mtx.net
> ----------
>
> ---
> You are currently subscribed to wxsig as: fullmer@tera.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] query the database aboput raw data

From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Mon, 12 Jun 2000 23:06:30 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90618-2000.06.12-22.07.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was doing some experimenting and using what Steve had told me about
querying the database for Position Data I reasoned that replacing the
word 'posit' with 'wx' would get me raw weather data and it worked.
This query below

http://64.34.101.121/cgi-bin/rawwx.cgi?call=n1bq-3&start=90&length=2

produced this output - I only got 5 reports through in that two hours.
But it also tells me that the IGate can hear me direct if the network
shuts up long enough. (One of the bennies of living at 1600 feet amsl
is you can reach out 84 miles to the Igate in one hop!)

N1BQ-3>APRS,VE2RIO-3*,WIDE:_06090918c056s002g006t056e1w
N1BQ-3>APRS,WIDE,WIDE:_06090953c097s003g007t055e1w

N1BQ-3>APRS,WIDE,WIDE:_06091018c103s003g008t055e1w
N1BQ-3>APRS,WIDE,WIDE:_06091033c092s004g008t054e1w
N1BQ-3>APRS,WIDE,WIDE:_06091048c054s005g010t052e1w

The syntax is straight forward, 'start' is how many hours ago and
'length' is for how many hours after 'start' you want data. You may
leave off the 'length' and everything from 'start' hours ago to
present. Change 'rawwx.cgi' to 'rawposit.cgi' and you get raw
position data from a trip or whatever.

73 de brian

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] Ligtning detectors

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 12 Jun 2000 21:18:41 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90626-2000.06.12-22.21.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

All: I am assuming that when everyone is talking about the ligtning sensor
from stormwise, we are all talking about the Model VLF2002 VLF
receiver/lightning detector. For $25 it seems like something worth playing
with. I have no idea of this parts merits as a lightning detector on
theory, but it seems worth a try.

Dave: That project at http://kato.theramp.net/sferics does look rather
involved! Probably a bit too nasty for a simple sensor setup like this
one. I'l keep your email and link.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] Re: Ligtning detectors

From: "Chuck Gooden" <chgooden@worldnet.att.net>
Date: Mon, 12 Jun 2000 22:56:12 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90630-2000.06.12-23.00.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Could someone explain the theory behind the Boltek ligthning
detectors. From their web site (www.bolttek.com) it appears that
their PC card can do some RDF and plot where the lightning is with
two or more units spaced apart for triangulation.

I have been told that the Boltek unit is just a simple Doppler unit
but do not know the details of the frequencies involved or the
antenna details.

My guess is the Stormwise unit is an AM radio that detects the static
burst caused my the lightning. By setting a threshold level you can
some what indicate how far away the lightning is and permit sounding

an alarm Please note this is only a guess, I would be interested in
knowing more details if any one has them. I beleive one of the
electronic hobbiest magazines had a similar project in one of the
past issues.

It seems to me that of the two units, it would be better to be able
to plot the lightning than just to sound and alarm that it is close.
Concentrated ligtning hits to ground ussually indicate the most
violent part of a thunderstorm and being able to plot the lightning
would be more beneficial than just sounding an alarm the storm is
close.   Although it may remind some to disconnect their antennas.

Chuck Gooden N9QBT
Rockford, IL

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] Boltek

From: William Beals <wmbeals@compuserve.com>
Date: Wed, 14 Jun 2000 14:30:14 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-90957-2000.06.14-15.32.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Chuck: I poured over the boltek websit too (BTW, only one 't'
(http://www.boltek.com)). They are really vague about how the think
works, enough so that I don't get warm fuzzies. They imply only one
antenna and using amplitude for distance measurements. Note that most of
the endorsements say how much "better" the new software is, probably
implying that the old stuff was pretty bad. It would seem that
triangulation would be a cool way to isolate lightning strikes, but I would
suspect the sensors would need to be very far apart and you'd need
micro-second timing accuracies to mesure the difference.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] Weather Station Siting

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Wed, 14 Jun 2000 22:58:46 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91015-2000.06.15-00.02.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

There has been some discussion on wxsig and aprssig about the standards
that apply to siting of weather stations. Recently, I learned of a web
page that gives recommended standards on weather station siting at
airports. This information is from a report by the Office of the
Federal Coordinator for Meteorology (OFCM).

Even though the report is targeted toward airport weather stations, it
gives some useful information which I would think of as recommendations
(but not necessarily requirements) for siting citizen weather stations.
The URL is:

http://www.ofcm.gov/siting/text/a-cover.htm

For citizen weather stations, I think that the best approach is to do
the best that you can and check the equipment regularly to be sure that
it is working reliably. If you don't meet the letter of this report,
the data is still very useful. The most important thing is that you
should never put the sensors in unsafe locations, i.e. it's better to
have the wind sensor in a low, safe place than in a high, unsafe place.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] RE: Weather Station Siting

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Thu, 15 Jun 2000 14:13:09 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91115-2000.06.15-14.19.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ:

You were right on the money with that. This reference states that the
airport info is to be applied to all sensors. Of course, most of us will
have to make some compromises, but slightly skewed data is better than no
data!

http://www.ofcm.gov/siting/text/a-cover.htm

2.6.5 Sensor Siting Standards. All installations of sensors shall be in
accordance with the latest Federal Standard for Siting Meteorological
Sensors at Airports published by the OFCM. Presently installed sensors may
be operated at their present location. However, if they must be relocated,
the Federal standards shall be followed.

BTW, I found a lot of good info there.

http://www.ofcm.gov/homepage/text/pubs_linx.htm

Jack KE4LWT

> There has been some discussion on wxsig and aprssig about the
> standards
> that apply to siting of weather stations. Recently, I
> learned of a web
> page that gives recommended standards on weather station siting at
> airports. This information is from a report by the Office of the
> Federal Coordinator for Meteorology (OFCM).
>
> Even though the report is targeted toward airport weather stations, it
> gives some useful information which I would think of as
> recommendations
> (but not necessarily requirements) for siting citizen weather
> stations.
> The URL is:
>
> http://www.ofcm.gov/siting/text/a-cover.htm
>
> For citizen weather stations, I think that the best approach is to do
> the best that you can and check the equipment regularly to be
> sure that
> it is working reliably. If you don't meet the letter of this report,
> the data is still very useful. The most important thing is that you
> should never put the sensors in unsafe locations, i.e. it's better to
> have the wind sensor in a low, safe place than in a high,
> unsafe place.
>
> Russ
> kb0tvj

47. [wxsig] Sore Jaw

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 17 Jun 2000 16:12:29 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91462-2000.06.17-17.15.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

QST arrived today. My jaw dropped as I was thumbing through it while
listening to my wife. On page 80 is an article about the weather station,
complete with a couple pictures! We're getting famous!! Hopefully the
website in that article works!

The beals5.com domain is stable enough now that I can let it do its own
thing for a while. I want to get the metric support in 1.09.1 so I can
declare that release finished. We finally got a bit of rain here (0.08"
yesterday and 0.19" today), so I am getting warm fuzzies that the rain
guage software works reasonably good.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Re: Sore Jaw

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Sat, 17 Jun 2000 17:42:02 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91471-2000.06.17-17.46.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will -

When I ordered the WX station instruments from Dallas Semi. on Friday, the
woman told me that they've had a large number of calls from the Circuit
Cellar magazine front cover .... guess they will get more next week after
the QST issue !

G. Beat
w9gb

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, June 17, 2000 5:12 PM
Subject: [wxsig] Sore Jaw

> Folks:
>
> QST arrived today. My jaw dropped as I was thumbing through it while
> listening to my wife. On page 80 is an article about the weather station,
> complete with a couple pictures! We're getting famous!! Hopefully the
> website in that article works!
>
> The beals5.com domain is stable enough now that I can let it do its own
> thing for a while. I want to get the metric support in 1.09.1 so I can
> declare that release finished. We finally got a bit of rain here (0.08"
> yesterday and 0.19" today), so I am getting warm fuzzies that the rain
> guage software works reasonably good.
>
> will
>
> --

> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] Re: Sore Jaw

From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Sat, 17 Jun 2000 19:18:16 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91476-2000.06.17-18.19.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here is the source code changes that I made ... its in a ZIP file this
time

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

----- Original Message -----
From: "William Beals" <wmbeals@compuserve.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, June 17, 2000 6:12 PM
Subject: [wxsig] Sore Jaw

> Folks:
>
> QST arrived today. My jaw dropped as I was thumbing through it
while
> listening to my wife. On page 80 is an article about the weather
station,
> complete with a couple pictures! We're getting famous!! Hopefully
the
> website in that article works!
>
> The beals5.com domain is stable enough now that I can let it do its
own
> thing for a while. I want to get the metric support in 1.09.1 so I
can
> declare that release finished. We finally got a bit of rain here
(0.08"
> yesterday and 0.19" today), so I am getting warm fuzzies that the
rain
> guage software works reasonably good.
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> wmbeals@compuserve.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---

> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to
leave-wxsig-15067P@lists.tapr.org
>
>
>
[Attachment: WXSRC091.zip; application/x-stuffit; 46,874 bytes]

50. [wxsig] Updates

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 18 Jun 2000 13:01:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91622-2000.06.18-14.11.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I'm making decent progress on the metric support, with any luck I'll have
it out today or tomorrow.

Brian: The file you sent still had a .sit extension, but I forced WinZip
to open it and it did so just fine. Your email reminded me I also need to
throw in your 2400 baud support for the TNC-LTP mode. Alas I have already
started messing with some of those files so I'll do a file compare to make
sure your stuff gets integrated cleanly.

Brian: Hopefully we arn't annoying Dallas too much with the surge in
orders. It is a neat weather station and they really arn't making any
money selling those at all, so we are kind of riding a bit on their good
nature. They've known we are doing this though, so we arn't surprizing
them at least.

On to coding...

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] PICs, etc.

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Mon, 19 Jun 2000 09:55:34 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91775-2000.06.19-10.03.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anyone used the T238 with a PIC or MIM instead of a "regular" TNC? My
goal is to make a quickly configurable, stand-alone weather station with as
little power overhead as possible, and maybe later to place one two at my
kids schools.

Jack KE4LWT

SGT Jack R. Smith
658th Quartermaster Company
1115 S. Gloster
Tupelo, MS 38801
(662) 842-6062

52. [wxsig] Re: PICs, etc.

From: Steve Dimse <k4hg@tapr.org>
Date: Mon, 19 Jun 2000 11:16:17 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91780-2000.06.19-10.20.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/19/00 10:55 AM Smith, Jack R SGT 658 QM CO
(Jack.Smith1@usarc-emh2.army.mil) wrote:

>Has anyone used the T238 with a PIC or MIM instead of a "regular" TNC? My
>goal is to make a quickly configurable, stand-alone weather station with as
>little power overhead as possible, and maybe later to place one two at my
>kids schools.
>
To use the Pic-E you would have to write some code. I had written code to
use the Peet Complete Record Format. The T-238 outputs the Data Logging
Format. It would not be hard to modify the code.

I do not know if it has been fixed in the present release of the MIM, but
the versions that were out a year or two ago could not be used with a
weather station. The reason was that when you programmed a MIM to accept
a GPS string, you would enter GPRMC, unlike the $GPRMC you typically use
with TNCs. In other words, the $ was assumed, fine for using with a GPS,
but with a weather station you need to enter !!, if you tell the MIM to
look for this, it is actually looking for $!!, and will never find it.

You might want to ask Bob Bruninga if this has been fixed.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Re: PICs, etc.

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Mon, 19 Jun 2000 10:20:29 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91782-2000.06.19-10.27.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve:

> To use the Pic-E you would have to write some code. I had
> written code to
> use the Peet Complete Record Format. The T-238 outputs the
> Data Logging
> Format. It would not be hard to modify the code.

It's been so long since I've even looked at code, that I'm not sure I'd have
a clue! I guess I could d/l some code for the PIC you had programmed up and
see what I could figure out. Is the Peet Logging Format published
somewhere?

> I do not know if it has been fixed in the present release of
> the MIM, but
> the versions that were out a year or two ago could not be used with a
> weather station. The reason was that when you programmed a
> MIM to accept
> a GPS string, you would enter GPRMC, unlike the $GPRMC you
> typically use
> with TNCs. In other words, the $ was assumed, fine for using
> with a GPS,
> but with a weather station you need to enter !!, if you tell
> the MIM to
> look for this, it is actually looking for $!!, and will never find it.
>
> You might want to ask Bob Bruninga if this has been fixed.

Thanks, I'll drop him a line and see if he's got it fixed, or if it's an
easy fix.

Jack KE4LWT

54. [wxsig] Re: PICs, etc.

From: Steve Dimse <k4hg@tapr.org>
Date: Mon, 19 Jun 2000 11:40:23 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91785-2000.06.19-10.44.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/19/00 11:20 AM Smith, Jack R SGT 658 QM CO
(Jack.Smith1@usarc-emh2.army.mil) wrote:

>> To use the Pic-E you would have to write some code. I had

>> written code to
>> use the Peet Complete Record Format. The T-238 outputs the
>> Data Logging
>> Format. It would not be hard to modify the code.
>
>It's been so long since I've even looked at code, that I'm not sure I'd have
>a clue! I guess I could d/l some code for the PIC you had programmed up and
>see what I could figure out. Is the Peet Logging Format published
>somewhere?
>
Yes, it is on their web site, www.peetbros.com

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] Re: PICs, etc.

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 19 Jun 2000 14:48:52 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91812-2000.06.19-13.52.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The point is that this would be superfluous use of the MIM or PIC-E
... there is way more than enough code space in th 68HC908 on the
T-238 to send the dta straight over to an MX-614 modem chip on the
breadboarding area. See some of John Hansen's work for the code to
'assemble' an AX25 frame and dump it out to a radio. There are more
than enough spare bit lines to handle PTT and DCD. That would be the
way to do this.

SteveB ... this might be a thought for the 'next' rev T-238 PCB, a
space to mount the MX-614 even at the cost of some breadboard space.

I would sure like to see a board half the current size with just the
32MHz clock, no jumpers, no debug port, smaller breadboard area, no
board mounted switches, just the header and with provision for wiring
an MX-614 or to a serial output.

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

----- Original Message -----
From: "Steve Dimse" <k4hg@tapr.org>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, June 19, 2000 11:40 AM
Subject: [wxsig] Re: PICs, etc.

> On 6/19/00 11:20 AM Smith, Jack R SGT 658 QM CO
> (Jack.Smith1@usarc-emh2.army.mil) wrote:
>
> >> To use the Pic-E you would have to write some code. I had
> >> written code to
> >> use the Peet Complete Record Format. The T-238 outputs the
> >> Data Logging
> >> Format. It would not be hard to modify the code.
> >
> >It's been so long since I've even looked at code, that I'm not sure
I'd have
> >a clue! I guess I could d/l some code for the PIC you had
programmed up and
> >see what I could figure out. Is the Peet Logging Format published
> >somewhere?
> >
> Yes, it is on their web site, www.peetbros.com
>
> Steve K4HG
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to
leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] PICs and MIMs

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 19 Jun 2000 22:23:29 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91921-2000.06.19-23.27.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

All: Havn't messed with the PIC-e or MIM and unfortunately don't know much about them. I at least know of the PIC-e and should know more about it, but I've never heard of the MIM. The idea of putting the modem on this board seems tempting as well, fewer pieces of equipment to deal with. For my intended remote locations though, I'd like the digipeater capability.

Brian: Do you have any more info on John Hansens work? I did some brief poking around and couldn't find anything. It is conceivable I'll run out of sensors to add in the next few months and more direct control does seem like a cool thing to at least mull over some more.

All: One TNC I do not currently support turns out to the the Kenwood THD-7A. The TNC in that radio appears to not support an unconnected conversation mode. I tried simulating it with my terminal emulator and it failed to "connect". I'd like to find some way of supporting this bugger but havn't had the time yet to mess with it yet.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] Re: PICs and MIMs

From: JerryJAE4XW@cs.com
Date: Tue, 20 Jun 2000 07:14:02 EDT
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-91957-2000.06.20-06.17.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have used the THD-7A TNC on packet connected to a computer and even a Palm Pilot II, it does work, set computer to 9600 baud, 8 bits, 1 stop,no parity flow control Xon/Xoff

I would like to know more about the weather station, who sell it etc.

Jerry AE4XW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

58. [wxsig] Re: PICs and MIMs

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 20 Jun 2000 19:10:06 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92084-2000.06.20-20.13.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: <JerryJAE4XW@cs.com>

To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>

> I would like to know more about the weather station, who sell it etc.
>

The 1-Wire weather station is for sale by Dallas Semiconductor.

http://www.ibutton.com/

Look for the part on weather.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

59. [wxsig] Re: wxsig digest: June 20, 2000

From: gsawyer <gsawyer@dove.net.au>
Date: Wed, 21 Jun 2000 16:51:04 +0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92146-2000.06.21-02.28.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hmm.. the only "problem" that I would forsee with using
other than the PIC-E would be the issue of Storage, I have been
experimenting with PIC's for some time, specifically for Packet
related "micro-epirbs" - this is in connection with a "Scout" hiking
safety network.

The MIC-E concept would be "near" to hte mark, but sadly (in the
standard format) no serial data input port capability, you could look at
a re-write, in fact the MIC-E concept is starting to look interesting
from this new viewpoint.

Sure you can get one of the smaller (and consequently less real-estate
and power etc) PIC's to TX simple packet data, but for digipeating
the likes of (say) the '16F84 doesn't cut the mustard - you must
include off-chip memory, there is not enough internal to store a frame
ready for Digipeating, the larger capacity PIC's would most likely be a
better option, but basically I only work with the little guys! :-)

P.S tks for the URL for PEET Bros, most useful data on their serial
format, for future reference.

73 es rgds Glenville.

Glenville T. Sawyer
Alternative Energy Experimenter, Amateur Radio Operator
             http://www.gsawyer.mtx.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] Data Format for Wx

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Fri, 23 Jun 2000 22:22:49 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92509-2000.06.22-22.28.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am experimenting with reporting Wx data before my T238 comes in. Whenever
I use the raw data format as my btext i.e.
"!3837.77N/09220.65W_06231612c000s000g000t000P000r000b00000" APRS programs
like JavaAPRS (k4hg) and various web sites like www.findu.com don't display
the data correctly, usually ignoring the wind direction and speed. The only
way I can get them to display correctly is to modify the btext to look like
this;
"!3837.77N/09220.65W_000/000g000t000P000r000b00000". Notice that wind
speed/direction are sent as 000/000 and the date/time stamp is missing. I
have noticed other Wx stations have really wierd displays with numbers that

are obviously in the wrong place, like 31" of rainfall since midnight and
windspeeds of 62mph.

I have reviewed the TAPR APRS Protocol Reference version 1.0.1m and it only
confuses me more. Will the T238 display Wx properly in APRS programs like
JavaAPRS? What format should I be using? Ideas, suggestions?

Rich Beckwith Wn0x
Jefferson City, Mo

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] Re: Data Format for Wx

From: Ian Wade <Ian.Wade@care4free.net>
Date: Fri, 23 Jun 2000 06:19:48 +0100
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92539-2000.06.23-00.45.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In message <LYR18315-92509-2000.06.22-22.28.57--ian.wade#care4free.net@lists.
tapr.org>, Rich Beckwith <wn0x@earthlink.net> writes
>I am experimenting with reporting Wx data before my T238 comes in. Whenever
>I use the raw data format as my btext i.e.
> "!3837.77N/09220.65W_06231612c000s000g000t000P000r000b00000" APRS programs
>like JavaAPRS (k4hg) and various web sites like www.findu.com don't display
>the data correctly, usually ignoring the wind direction and speed. The only
>way I can get them to display correctly is to modify the btext to look like
>this;
> "!3837.77N/09220.65W_000/000g000t000P000r000b00000". Notice that wind
>speed/direction are sent as 000/000 and the date/time stamp is missing. I
>have noticed other Wx stations have really wierd displays with numbers that
>are obviously in the wrong place, like 31" of rainfall since midnight and
>windspeeds of 62mph.
>

Hi Rich. I have just run those two packets through <APRSdec>:


```
============================================================
          <APRSdec> TM  The G3NRW APRS Packet Decoder
                 Version 2.0 (16 June 2000)
============================================================
Copyright (C) 2000 Ian Wade, G3NRW
<APRSdec> is a trademark owned by Ian Wade, G3NRW.
============================================================
<APRSdec> comes with ABSOLUTELY NO WARRANTY. This is free
software, and you are welcome to redistribute it under certain
conditions -- see the GNU GPL license in LICENSE.TXT.
============================================================

Input file   = w0nx.log
Output file  = w0nx.out
DOS Runtime  = 23 Jun 2000  5:43:25.62

NOTE: If this report contains anything that you think is incorrect,
      please email it to g3nrw@arrl.net for investigation. Thank you.


------------------------------------------------------------
Record #1
WN0X*>APRS:!3837.77N/09220.65W_06231612c000s000g000t000P000r000b00000
 APRS Data Type= Posit w/o time. No APRS
 Lat= 38 deg 37.77 min N  Long= 92 deg 20.65 min W
 Icon= WX station   Overlay= (none)

------------------------------------------------------------
Record #2
WN0X*>APRS:!3837.77N/09220.65W_000/000g000t000P000r000b00000
 APRS Data Type= Posit w/o time. No APRS
 Lat= 38 deg 37.77 min N  Long= 92 deg 20.65 min W
 Icon= WX station   Overlay= (none)
 Wind Direction= 000 deg   Speed= 000 knots (0.0 mph  0.0 kph  0.0 m/s)
 Gust Speed= 0 mph (0.0 kph  0.0 m/s  0.0 knots)
 Temp= 0 degF (-17.8 degC)   Windchill= 0.0 degF (-17.8 degC)
```

```
 Rain: Last hour= 0 in (0.0 mm)   Last 24 hrs= (Indeterminate)
       Since midnight= 0 in (0.0 mm)
 Barometric Pressure= (Indeterminate)

------------------------------------------------------------



The reason why the first packet isn't decoded as you want is because it
looks like a posit packet *without* timestamp, whereas you have included
a timestamp where there shouldn't be one, and in the wrong place. In effect,
the timestamp and everything that follows is just a comment.

Also, you've mixed up the formats; if a WX report is part of a posit
report (like #2), then you give the course and speed as "mmm/nnn", as you
did. But if you want to give the course and speed using "c" and "s"
("cmmmsnnn"), then you need the *positionless* format, like this:

------------------------------------------------------------
Record #3
WN0X*>APRS:_06231612c000s000g000t000P000r000b00000
APRS Data Type= Positionless WX Station
 Date= 23 Jun   Time= 16 hours 12 mins UTC
 Wind Direction= 000 deg   Speed= 000 mph (0.0 kph  0.0 m/s  0.0 knots)
 Gust Speed= 0 mph (0.0 kph  0.0 m/s  0.0 knots)
 Temp= 0 degF (-17.8 degC)   Windchill= 0.0 degF (-17.8 degC)
 Rain: Last hour= 0 in (0.0 mm)   Last 24 hrs= (Indeterminate)
       Since midnight= 0 in (0.0 mm)
 Barometric Pressure= (Indeterminate)

------------------------------------------------------------


But if you want the time *and* the position, you could do this:

------------------------------------------------------------
Record #4
WN0X*>APRS:@231612z3837.77N/09220.65W_000/000g000t000P000r000b00000
 APRS Data Type= Posit w/ time. With APRS
 Day= 23  Time= 16 hours 12 mins UTC
 Lat= 38 deg 37.77 min N  Long= 92 deg 20.65 min W
 Icon= WX station   Overlay= (none)
 Wind Direction= 000 deg   Speed= 000 knots (0.0 mph  0.0 kph  0.0 m/s)
 Gust Speed= 0 mph (0.0 kph  0.0 m/s  0.0 knots)
 Temp= 0 degF (-17.8 degC)   Windchill= 0.0 degF (-17.8 degC)
 Rain: Last hour= 0 in (0.0 mm)   Last 24 hrs= (Indeterminate)
       Since midnight= 0 in (0.0 mm)
 Barometric Pressure= (Indeterminate)

------------------------------------------------------------

Note the differences:

1. You use "@" as the APRS Data Type Identifier instead of "!" (immediately
   after the ":"). This means the posit contains a timestamp.

2. The timestamp immediately follows the "@", and is in day/hrs/mins format.
   You can't include the month in this format.


You might find it useful to try out the APRS Decoder, so you can verify which
formats will/won't work. To run it, all you need to do is prepare an input
file like this:

------------------------------------------------------------
WN0X*>APRS:!3837.77N/09220.65W_06231612c000s000g000t000P000r000b00000
WN0X*>APRS:!3837.77N/09220.65W_000/000g000t000P000r000b00000
WN0X*>APRS:_06231612c000s000g000t000P000r000b00000
WN0X*>APRS:@231612z3837.77N/09220.65W_000/000g000t000P000r000b00000
------------------------------------------------------------

Edit this data any way you like, and the decoder will tell you how APRS will
treat it.

<APRSdec> is at http://www.netro.co.uk/aprs.htm

Hope this helps.

73
```

```
Ian, G3NRW
Technical Editor, APRS Protocol Specification

--
+---------------------------------------------------------------------+
| APRS on 144.800  [IO91SX]             ~55km/35 miles NNW of London |
|                       email: g3nrw@arrl.net                         |
|                                                                     |
| APRS PROTOCOL SPEC:     http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.netro.co.uk/aprs.htm            |
+---------------------------------------------------------------------+

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

62. [wxsig] Re: Data Format for Wx

```
From: Ian Wade <Ian.Wade@care4free.net>
Date: Fri, 23 Jun 2000 06:58:01 +0100
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92549-2000.06.23-01.02.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In article <LYR18315-92539-2000.06.23-00.45.18--ian.wade#care4free.net@lists
.tapr.org>, Ian Wade <Ian.Wade@care4free.net> writes
>
>
>But if you want the time *and* the position, you could do this:
>
>-----------------------------------------------------------------
>Record #4
>WN0X*>APRS:@231612z3837.77N/09220.65W_000/000g000t000P000r000b00000
> APRS Data Type= Posit w/ time. With APRS

Oooooooops. The "@" means posit with timestamp *and* the station has APRS
messaging capability. I should have said "/" (i.e. no messaging):

-----------------------------------------------------------------
WN0X*>APRS:/231612z3837.77N/09220.65W_000/000g000t000P000r000b00000
 APRS Data Type= Posit w/ time. No APRS
-----------------------------------------------------------------

I should have checked against the table on page 17 of the spec. My
apologies.

73
Ian, G3NRW
Technical Editor, APRS Protocol Specification

--
+---------------------------------------------------------------------+
| APRS on 144.800  [IO91SX]             ~55km/35 miles NNW of London |
|                       email: g3nrw@arrl.net                         |
|                                                                     |
| APRS PROTOCOL SPEC:     http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.netro.co.uk/aprs.htm            |
+---------------------------------------------------------------------+

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

63. [wxsig] Re: Data Format for Wx

```
From: Steve Dimse <k4hg@tapr.org>
Date: Fri, 23 Jun 2000 08:21:47 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92581-2000.06.23-07.25.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/23/00 11:22 PM Rich Beckwith (wn0x@earthlink.net) wrote:

>I am experimenting with reporting Wx data before my T238 comes in.  Whenever
>I use the raw data format as my btext i.e.
> "!3837.77N/09220.65W_06231612c000s000g000t000P000r000b00000" APRS programs
>like JavaAPRS (k4hg) and various web sites like www.findu.com don't display
>the data correctly, usually ignoring the wind direction and speed.  The only
>way I can get them to display correctly is to modify the btext to look like
>this;
> "!3837.77N/09220.65W_000/000g000t000P000r000b00000".  Notice that wind
```

>speed/direction are sent as 000/000 and the date/time stamp is missing. I
>have noticed other Wx stations have really wierd displays with numbers that
>are obviously in the wrong place, like 31" of rainfall since midnight and
>windspeeds of 62mph.
>
This is not a vaild weather report format. If you wish to put lat/lon in
the same packet, there must also be a timestamp, so you can use the '@'
format packet or the '/' format packet (the latter being more correct,
since the difference is supposed to indicate whether you can rx APRS
messages, in a stand-alone wx most likely not.

However, this is not the format T238 uses...

>I have reviewed the TAPR APRS Protocol Reference version 1.0.1m and it only
>confuses me more. Will the T238 display Wx properly in APRS programs like
>JavaAPRS? What format should I be using? Ideas, suggestions?
>
T238 sends data in either the Peet Bros format (starts with !!) or the
positionless wx format, starts with '_'. In either case you place a
position report (generally using the '!' format) in the beacon text.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] Updated TAPR T-238 Web Page

From: "Steven R. Bible" <steveb@dandin.com>
Date: Fri, 23 Jun 2000 19:25:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92664-2000.06.23-18.29.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Everyone,

I've updated the TAPR T-238 web page with information about the T-238 in
Circuit Cellar Magazine and a pointer to Will's new T-238 web page at
http://www.beals5.com/wx.

The URL to the TAPR T-238 is

  http://www.tapr.org/tapr/html/Ft238.html

Enjoy!

 - Steve, N7HPR
   n7hpr@tapr.org

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] 1-Wire wx station for sale

From: Paul Womble <pwomble1@tampabay.rr.com>
Date: Sun, 25 Jun 2000 21:28:26 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92910-2000.06.25-20.31.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For sale:

1-Wire weather station with rain guage.
Wx station is assembled but not sealed. Works 100%.
Rain guage still in the box.

Purchased new last month...but not enough time to complete the project.

$120 shipped in the CONUS

73
Paul AJ4Y

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

66. [wxsig] TNCs, etc

From: William Beals <wmbeals@compuserve.com>
Date: Sun, 25 Jun 2000 21:52:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-92921-2000.06.25-23.20.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

(Web access problems seem to abound. I wasn't able to access web stuff
last Thursday night and then took of for the weekend on a trip to the
mountians.)

Glen: With garboons of flash ROM (32K) and a respectable amount of RAM,
maybe the we could throw an elementary digipeater in the T238. Of course I
have no idea what is involved in making a decent digipeater, I'm sure it
involves a LOT more than just repeating messages. Not having all the
mailbox stuff and gunk would certainly simplify stuff. Maybe after I
retire (about 30 years) I can look into something like that, it seems a
mind-bogglingly huge project.

Rich/Ian/Steve: Besides the basic posionless format, I do now also have a
positioned format, added as of 1.08.x or 1.09.0, can't remember which. The
format is:
@081408z3941.83N/10448.76W_081/003g006t077P000r000e1w
Both this format and my positionless format seem to be OK with every APRS
decoder program I have seen so far. The only known problem I have is with
WinAPRS if you do not have any rainguage data, somehow the "e1w" identifier
gets misinterpreted as 1 inch of rain.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

67. [wxsig] Re: TNCs, etc

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 26 Jun 2000 09:25:20 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93042-2000.06.26-09.27.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks Will, I will try the format and see how it works with our Java based
app and APRS. Will your format support the addition of barometric pressure
if/when that option is available for the 1-wire weather system?

Rich/Ian/Steve: Besides the basic posionless format, I do now also have a
>positioned format, added as of 1.08.x or 1.09.0, can't remember which. The
>format is:
>@081408z3941.83N/10448.76W_081/003g006t077P000r000e1w
>Both this format and my positionless format seem to be OK with every APRS
>decoder program I have seen so far. The only known problem I have is with
>WinAPRS if you do not have any rainguage data, somehow the "e1w" identifier
>gets misinterpreted as 1 inch of rain.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] Rain Gauge et al.

From: "Brian B. Riley" <ka2bqe@amsat.org>
Date: Mon, 26 Jun 2000 19:39:12 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93183-2000.06.26-18.41.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I ordered my rain gauge today from DalSemi ... looking forward to
getting that hooked up ... duhhhh ... what do I do in the winter ---
we always get snowfalls measured in multiple inches often measured in
feet - what do I do then??? Put it away for the season????

What is the latest word on the barometric sensor and the humidity
sensor for one-wire?

Also ordered a pair of Thermochrons to play with. I have the receptors
already.

See ... I really needed this vacation from teaching to free my "inner
child" ... look out world.

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] Re: Rain Gauge et al.

From: Steve Dimse <k4hg@tapr.org>
Date: Mon, 26 Jun 2000 20:50:47 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93192-2000.06.26-19.54.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/26/00 7:39 PM Brian B. Riley (ka2bqe@amsat.org) wrote:

>I ordered my rain gauge today from DalSemi ... looking forward to
>getting that hooked up ... duhhhh ... what do I do in the winter ---
>we always get snowfalls measured in multiple inches often measured in
>feet - what do I do then??? Put it away for the season????
>
Is it a heated rain gauge? At least one manufacturer, Peet Bros, sells a
heated gauge as an option, which melts the snow as it falls into it,
giving a "rain equivalent" snowfall, which will be much less, but of
course the translation to inches of snow is variable.

If it isn't heated (and in the 1 wire system it would almost have to be
unless there were a separate set of heater wires) then you might as well
put it away for the winter.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

70. [wxsig] Re: Rain Gauge et al.

From: Red <RedHaines@centurytel.net>
Date: Mon, 26 Jun 2000 21:18:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93209-2000.06.26-21.22.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi, Steve;

When I inquired if the Peet Bros heated rain gauge measured water
equivalent of snow, the didn't answer the question. Do you know if it
works?

73 de Red, WOØW

Steve Dimse wrote:

> On 6/26/00 7:39 PM Brian B. Riley (ka2bqe@amsat.org) wrote:
>

> >I ordered my rain gauge today from DalSemi ... looking forward to
> >getting that hooked up ... duhhhh ... what do I do in the winter ---
> >we always get snowfalls measured in multiple inches often measured in
> >feet - what do I do then??? Put it away for the season????
> >
> Is it a heated rain gauge? At least one manufacturer, Peet Bros, sells a
> heated gauge as an option, which melts the snow as it falls into it,
> giving a "rain equivalent" snowfall, which will be much less, but of
> course the translation to inches of snow is variable.
>
> If it isn't heated (and in the 1 wire system it would almost have to be
> unless there were a separate set of heater wires) then you might as well
> put it away for the winter.
>
> ---
> You are currently subscribed to wxsig as: RedHaines@centurytel.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] Re: Rain Gauge et al.

From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 26 Jun 2000 20:48:59 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93222-2000.06.26-21.52.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Brian B. Riley <ka2bqe@amsat.org>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Monday, June 26, 2000 5:39 PM
Subject: [wxsig] Rain Gauge et al.

> I ordered my rain gauge today from DalSemi ... looking forward to
> getting that hooked up ... duhhhh ... what do I do in the winter ---
> we always get snowfalls measured in multiple inches often measured in
> feet - what do I do then??? Put it away for the season????

Several months ago there was a posting (with picture) on the Dallas Semi
weather page from a person who had built a heater for their rain gauge.
Should be in their archives. You'll have to add another pair of wires to
carry the power out to the gauge.

> What is the latest word on the barometric sensor and the humidity
> sensor for one-wire?

Humidity sensor should be available by end of July. An article on should be
in an upcoming Sensors Magazine. The barometer should come after that. I
have schematics of what they have planned. If you'd like them, let me know
and I'll try to find them.

> Also ordered a pair of Thermochrons to play with. I have the receptors
> already.

Neat gadgets. I used three of them to compare the temperature as measured
in the sealed 1-Wire enclosure, and two ventilated radiation shields.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

72. [wxsig] Replies

From: William Beals <wmbeals@compuserve.com>
Date: Mon, 26 Jun 2000 21:03:50 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93225-2000.06.26-22.17.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

Rich: The current format should be extensible to almost any addtional
sensors that show up. Barometric pressure and humidity are already
documented, so I should be able to add the data once I figure out how to
get the data from some sensors. I'm just following the current APRS spec
1.01m or something like that, so I should be set.

All: Russ sent me some info on the barometric pressure sensor being
proposed on the Dallas reflector. Sensors are getting added faster than I
can write code for them.

All: Hadn't thought about what to do with the rain guage during the
winter. Heating sounds interesting as it would at least give me some idea
of how much melted snow my plants are (or are not) getting. For now I
guess I'll just have to plan on a cap of some sorts to protect it during
the winter.

Brian: Thermochrons are fun. It appears I have worn out my first one, but
I got work to buy 12 more for some data I wanted to gather for them. I now
have a nice stash of them to use for all sorts of fun things. One of my
more bizarre experiments was to take one with me for some practice flying a
few months ago. I basically flew around in circles practicing landings and
takoffs. I could see a definite and repeatable 5 degree difference in air
pressure between my ground level maneuvers and my 1000-foot flying.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

73. [wxsig] Re: Rain Gauge et al.

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 26 Jun 2000 23:56:46 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93241-2000.06.26-22.59.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "Russ Chadwick" <crb5@uswest.net>
Sent: Monday, June 26, 2000 10:48 PM

> Several months ago there was a posting (with picture) on the Dallas
Semi
> weather page from a person who had built a heater for their rain
gauge.
> Should be in their archives. You'll have to add another pair of
wires to
> carry the power out to the gauge.

... hmmmm I seem to remember that - got the URL???? What gage wires?
 How much juice? What is the heating element?

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

74. [wxsig] Re: Rain Gauge et al.

From: Steve Dimse <k4hg@tapr.org>
Date: Tue, 27 Jun 2000 07:27:09 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93302-2000.06.27-06.31.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/26/00 10:18 PM Red (RedHaines@centurytel.net) wrote:

>When I inquired if the Peet Bros heated rain gauge measured water
>equivalent of snow, the didn't answer the question. Do you know if it
>works?
>
I've heard people say it works, and I've seen numbers coming out of wx
stations during winter storms, but personal experience is lacking, I live
in the Florida Keys. I know, no sympathy!

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

75. [wxsig] Fw: [weather] RE: Humidity sensor article

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 27 Jun 2000 19:01:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93463-2000.06.27-20.05.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here is a response from Dan Awtrey of Dallas Semiconductor about the
humidity and barometric sensors that are being developed for the 1-Wire
weather station.

Russ
kb0tvj

> > -----Original Message-----
> > From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> > Sent: Thursday, June 22, 2000 9:42 AM
> > To: 'Ron Therrien'
> > Cc: 'weather@ibutton.com'
> > Subject: [weather] RE: Humidity sensor article
> >
> > Ron,
> >
> > Your questions are good ones and I will attempt to answer them. Others
> > will appreciate your asking.
> >
> > Check suppliers such as Arrow and Newark for the Honeywell humidity
> > sensor. The stock number for the HIH-3605 from Newark is 91F7135 (list
> > price $33). As you can see, the list price for single piece quantities
> > is steep. You might try to obtain a sample.
> >
> > The diode and capacitor are not critical. Any Schottky diode will
> > work, and in fact, a standard signal diode such as the 1N914 or 1N4148
> > can be used. The voltage stored on the capacitor will just be slightly
> > lower than it would be if the Schottky diode were used. The main
> > concern with the capacitor is leakage current. Use a ceramic type
> > rather than an electrolytic.
> >
> > Both the DS2450 and the DS2438 are 1-Wire ADCs. The DS2450 has four
> > I/Os that function as either analog inputs or digital outputs.
> > Although it can be programmed for more resolution,its basic accuracy
> > is 8-bits. All four of the DS2450 I/Os have a 5V full-scale range,
> > while the DS2438 has two seperate ADCs with quite different ranges.
> > One ADC has a multiplexer so it can measure either the analog input or
> > the voltage on its Vdd pin. The full-scale range for this ADC is .05
> > to 10V at 10-bits. The other ADC is intended to measure the voltage
> > drop developed across a 50 milliOhm sense resistor and has a plus and
> > minus 300 millvolt range at 10-bits. So using the DS2438 gives more
> > resolution over the 0-5V range than the DS2450 and also provides a
> > 13-bit temp sensor similar to the DS18B20 which is used on the 1-Wire
> > humidity sensor. Also, because the DS2438 is produced in higher volume
> > it is substantially cheaper and we save the cost of a seperate temp
> > sensor.
> >
> > You can assemble a 1-Wire barometer using a DS2438 and a Motorola
> > MPXA4115 pressure sensor. The MPXA4115 is fully temperature and signal
> > conditioned, the problem is the required supply current. The data
> > sheet specs a maximum of 10mA -about twice what the COM port adapter

> > normally supplies. This can be overcome by mounting the barometer
> > inside near the computer and an source of power. Run some tubing from
> > the sensor to the outside so opening/closing doors and windows does
> > not affect the readings. A WinWord copy of the schematic and PCB
> > layout for such a sensor is atached for your convenience.
> >
> > Regards,
> >
> > Dan Awtrey   Staff Engineer
> > Dallas Semiconductor   Phone: 972-371-6297
> > Building C   FAX: 972-371-3715
> > 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> > Dallas, TX 75244-3292
> > http://www.ibutton.com
> >
> >
> > -----Original Message-----
> > From: Ron Therrien [mailto:therrien@itplus.com]
> > Sent: Wednesday, June 21, 2000 4:01 PM
> > To: Dan Awtrey
> > Subject: Re: [weather] RE: Humidity sensor article
> >
> >
> > Dan,
> >
> >   Sounds great. Where can you get the 3605 in low quantity? Also, do
> > you
> > have part# or specs for the capacitor and diode?
> >
> > One last question, why did you use the 2438 instead of a 2450 device?
> >
> > Is there a similar part#/technique to use to build a barometric
> > pressure
> > sensor?
> >
> > Sorry for all the dumb questions but I'm not an EE.
> >
> > Thanks,
> >
> > Ron Therrien
> >
> > <<Presur38.doc>>
>
[Attachment: Presur38.doc; application/msword; 23,552 bytes]

76. [wxsig] LCDs!

From: William Beals <wmbeals@compuserve.com>
Date: Wed, 28 Jun 2000 21:13:23 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93772-2000.06.28-22.35.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve:

Whoppee! Looks like we have LCDs!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

77. [wxsig] Re: LCDs!

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Wed, 28 Jun 2000 23:57:23 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-93778-2000.06.28-23.01.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 28 Jun 2000, at 21:13, William Beals wrote:

> Steve:
>
> Whoppee! Looks like we have LCDs!
>
> will
>

Sounds like good news! Along those lines, I was passed a site the
other day who has LCD's for a very reasonable price (advertised as
new, too!) However, I don't think that they would be a reliable
source for production kits solely because it is a surplus house --
but it would be a great site for small quantity orders for
development, etc.

> From: "Warren A. Merkel" <austin@magicnet.net>
> To: <ae4ko@amsat.org>
> Subject: surplus parts
>
> This is the place that has a bunch of LCD modules for cheap.
>
> http://www.eio.com/lcdprodt.htm

Random Quote:

    Advertising (n): the science of arresting the human
    intelligence for long enough to get money from it.
           -- Stephen Leacock.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

78. [wxsig] Rain Gauge Heater

From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 28 Jun 2000 22:43:20 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93784-2000.06.28-23.47.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here's a URL about building a heater for the 1-Wire rain gauge.

http://www.geocities.com/t_konstali/rain_gauge.htm

Russ
kb0tvj

79. [wxsig] Re: Rain Gauge et al.

From: "N4XI" <n4xi@sigecom.net>
Date: Thu, 29 Jun 2000 11:14:21 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93886-2000.06.29-11.16.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi guys...

The precip amount versus snowfall has been an ongoing topic of conversaton
for years. The bottom line is you can't convert melted snow precip into
inches of snow. Just doesn't work that way. Despite the advances in
technology, snowfall is still measured by humans with rulers. The subject
is far too complex to discuss in an email debate. There was a very good
article in "Weatherwise" published by Heldref Publications in the past year
(I think...). I haven't checked, but there might be an archive at their
website www.weatherwise.org. Also, Nolan Doesken (sp?), a noted
climatologist from Colorado State University at Ft. Collins, has written a
book on the subject. I understand he's considered to be a leading authority
on the subject.

73, John

----- Original Message -----
From: "Brian B. Riley" <ka2bqe@amsat.org>

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, June 26, 2000 6:39 PM
Subject: [wxsig] Rain Gauge et al.

>
> I ordered my rain gauge today from DalSemi ... looking forward to
> getting that hooked up ... duhhhh ... what do I do in the winter ---
> we always get snowfalls measured in multiple inches often measured in
> feet - what do I do then??? Put it away for the season????
>
> What is the latest word on the barometric sensor and the humidity
> sensor for one-wire?
>
> Also ordered a pair of Thermochrons to play with. I have the receptors
> already.
>
> See ... I really needed this vacation from teaching to free my "inner
> child" ... look out world.
>
> --
>   Brian B. Riley, N1BQ   (ex-KA2BQE)
>   <http://www.wulfden.org>
>
>
>
>
> ---
> You are currently subscribed to wxsig as: n4xi@sigecom.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] Re: Rain Gauge et al.

From: Anson Mount <amount@execpc.com>
Date: Thu, 29 Jun 2000 11:53:35 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93888-2000.06.29-11.57.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Absolutely, water content compared to snowfall measurement depends on the air
temperature when the snow actually falls, hence "heavy" and "dry" snows. Water
equivalence is measurable by the rain gauge but, as far as I know, is not really
of use in relation to actual snow depth. Do they make ruler heaters?

Anson / n9rjx

N4XI wrote:

> Hi guys...
>
> The precip amount versus snowfall has been an ongoing topic of conversaton
> for years. The bottom line is you can't convert melted snow precip into
> inches of snow. Just doesn't work that way. Despite the advances in
> technology, snowfall is still measured by humans with rulers. The subject
> is far too complex to discuss in an email debate. There was a very good
> article in "Weatherwise" published by Heldref Publications in the past year
> (I think...). I haven't checked, but there might be an archive at their
> website www.weatherwise.org. Also, Nolan Doesken (sp?), a noted
> climatologist from Colorado State University at Ft. Collins, has written a
> book on the subject. I understand he's considered to be a leading authority
> on the subject.
>
> 73, John
>
> ----- Original Message -----
> From: "Brian B. Riley" <ka2bqe@amsat.org>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Monday, June 26, 2000 6:39 PM
> Subject: [wxsig] Rain Gauge et al.
>
> >
> > I ordered my rain gauge today from DalSemi ... looking forward to
> > getting that hooked up ... duhhhh ... what do I do in the winter ---

> > we always get snowfalls measured in multiple inches often measured in
> > feet - what do I do then??? Put it away for the season????
> >
> > What is the latest word on the barometric sensor and the humidity
> > sensor for one-wire?
> >
> > Also ordered a pair of Thermochrons to play with. I have the receptors
> > already.
> >
> > See ... I really needed this vacation from teaching to free my "inner
> > child" ... look out world.
> >
> > --
> >   Brian B. Riley, N1BQ   (ex-KA2BQE)
> >   <http://www.wulfden.org>
> >
> >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: n4xi@sigecom.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
> ---
> You are currently subscribed to wxsig as: amount@execpc.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] Re: Rain Gauge et al.

From: "Russ Chadwick" <crb5@uswest.net>
Date: Thu, 29 Jun 2000 17:09:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93967-2000.06.29-18.13.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I don't believe that there was any suggestion that a measurement of the
water content in snow was an indication of the snow depth. I think that the
point was that since the rain gauge is going to be there in the winter, it
could be used to measure the water equivalent of the snow if the gauge was
heated properly. Too little heat will not melt the snow. Too much heat
will generate convection currents that will guide some snow flakes away from
the catch area. Both of these effects will cause an underestimate of the
water equivalent of the snow.

Russ
kb0tvj

----- Original Message -----
From: Anson Mount <amount@execpc.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Thursday, June 29, 2000 10:53 AM
Subject: [wxsig] Re: Rain Gauge et al.

> Absolutely, water content compared to snowfall measurement depends on the
air
> temperature when the snow actually falls, hence "heavy" and "dry" snows.
Water
> equivalence is measurable by the rain gauge but, as far as I know, is not
really
> of use in relation to actual snow depth. Do they make ruler heaters?
>
> Anson / n9rjx
>
> N4XI wrote:
>
> > Hi guys...
> >
> > The precip amount versus snowfall has been an ongoing topic of
conversaton
> > for years. The bottom line is you can't convert melted snow precip into
> > inches of snow. Just doesn't work that way. Despite the advances in
> > technology, snowfall is still measured by humans with rulers. The

subject
> > is far too complex to discuss in an email debate. There was a very good
> > article in "Weatherwise" published by Heldref Publications in the past
year
> > (I think...). I haven't checked, but there might be an archive at their
> > website www.weatherwise.org. Also, Nolan Doesken (sp?), a noted
> > climatologist from Colorado State University at Ft. Collins, has written
a
> > book on the subject. I understand he's considered to be a leading
authority
> > on the subject.
> >
> > 73, John
> >
> > ----- Original Message -----
> > From: "Brian B. Riley" <ka2bqe@amsat.org>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Monday, June 26, 2000 6:39 PM
> > Subject: [wxsig] Rain Gauge et al.
> >
> > >
> > > I ordered my rain gauge today from DalSemi ... looking forward to
> > > getting that hooked up ... duhhhh ... what do I do in the winter ---
> > > we always get snowfalls measured in multiple inches often measured in
> > > feet - what do I do then??? Put it away for the season????
> > >
> > > What is the latest word on the barometric sensor and the humidity
> > > sensor for one-wire?
> > >
> > > Also ordered a pair of Thermochrons to play with. I have the receptors
> > > already.
> > >
> > > See ... I really needed this vacation from teaching to free my "inner
> > > child" ... look out world.
> > >
> > > --
> > >   Brian B. Riley, N1BQ   (ex-KA2BQE)
> > >   <http://www.wulfden.org>
> > >
> > >
> > >
> > >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: n4xi@sigecom.net
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> > ---
> > You are currently subscribed to wxsig as: amount@execpc.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

82. [wxsig] Re: Rain Gauge et al.

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 29 Jun 2000 19:54:53 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93976-2000.06.29-18.58.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: "Russ Chadwick" <crb5@uswest.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Thursday, June 29, 2000 7:09 PM
Subject: [wxsig] Re: Rain Gauge et al.

> I don't believe that there was any suggestion that a measurement of

the
> water content in snow was an indication of the snow depth. I think
that
> the point was that since the rain gauge is going to be there in the
winter,
> it could be used to measure the water equivalent of the snow if the
> gauge was heated properly. Too little heat will not melt the snow.
Too
> much heat will generate convection currents that will guide some
snow
> flakes away from the catch area. Both of these effects will cause
an
> underestimate of the water equivalent of the snow.

 This has all but convinced me that I will simply take down the Rain
Gauge from November to March here, which brings me to an interesting
question;

How do we tell the T-238 that we no longer have a rain gauge attached?
Or do we even need to? That is to say, will removal of the gauge after
we have told the T-238 firmware that it is there cause subsequent
problems?

--
  Brian B. Riley, N1BQ   (ex-KA2BQE)
   <http://www.wulfden.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

83. [wxsig] 1-Wire Rain Gauge

From: "." <ddillaby@bit-net.com>
Date: Thu, 29 Jun 2000 19:59:45 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-93977-2000.06.29-19.04.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I recently purchased and assembled the 1-Wire WX station w/rain gauge, but am still unsure about how calibration is carried out other than there are two adjusting screws. Any suggestions as there was no detail on how to make the adjustment?

84. [wxsig] 1.09.1 Release

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 29 Jun 2000 22:24:44 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-94029-2000.06.29-23.26.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

1.09.1 is released. It has metric display support and the the TNC-LTP mode changed to 2400 baud.
New code is posed on the websites.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

85. [wxsig] Rain guage--or not

From: William Beals <wmbeals@compuserve.com>
Date: Thu, 29 Jun 2000 22:25:33 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-94030-2000.06.29-23.27.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

It would be kind of cool to come up with an automated snowfall-ometer.
 Impractical, but cool.

Water content would be cool for plants, but not much else. Right now the
code gets pretty upset if the rain guage disappears, it will just
constantly log errors every five seconds. I think it will just transmit
dashes for all the fields on the LCD and UART strings. Sounds like I need
to add a feature that handles missing rain guages more gracefully.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
wmbeals@compuserve.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

July 2000

Original source file: wxsig.0007
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0007

1. [wxsig] Get your DS1994s soon!

From: William Beals <wmbeals@compuserve.com>
Date: Sat, 1 Jul 2000 23:01:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-94393-2000.07.02-00.06.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

ddillaby@bit-net.com: (you didn't idenfity yourself). Procedures for calibrating your rain guage are on the Dallas Semiconductor website. It basically involves twisting the adjustment screws evenly while you slowly drip some calibrated amounts of water through the rain guage until you get the correct number of counts. Russ has done a few and said it took about 4 hours each. He was nice enough send me one of his calibrated units, so I havn't had to do it personally.

All: I have started playing with my DS1994s. These are the cute little ibuttons that have a real-time clock as well as 4Kbits of battery-backed RAM. I got the basic routines to read the DS1994 time and set the T238 clock working today. They were a bit messy as the "real time clock" in the DS1994 is 32-bit seconds counter since 1/1/1970. I had to convert that to a regular date/time. Right now the T238 routines are read-only, I can't think of a compelling to make them read/write. My biggest problem now is that the DS1994 has only one timezone ,so I picked UTC.

Right now I do not do math for local time, I just set up another hours register and incrment it in parallel. Since I have only one time counter in the DS1994, I am going to have to have an arbitrary hours adder/subtractor for local time. To handle all the carry-over is going to be a pain.

Can anyone think of a decent reason why I should be able to set the DS1994 time from the T238? For now I am assuming the person has a computer and can set it there.

The main advantage of this feature is that if your power gets interrupted, the T238 will read the time on power-up and resume operations without needing your attention. It seems as though about a third of the time I cycle power to the T238 I mess up the time and Russ emails me to tell me to fix it.

After time stuff is data logging. I am going to try to force myself to fit within the TMEX file structure that the Dallas folk suggest. I'd personally prefer just straight binary data, but the Dallas folk already have the file reader so it makes a compelling case to deal with the added burden of their file system to get the data to the PC. No more DOS programs!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] New Email address

From: William Beals <will@beals5.com>
Date: Sun, 2 Jul 2000 16:46:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-94466-2000.07.02-17.49.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I am in the process of changing my email address. I've had the same email address since the days before the internet was popular and and before MS Windows even existed (about 1990, ancient history by computer standards). My new email address is will@beals5.com and should be with me for an even longer time. I will continue to get email on both accounts, but the other account will eventually go away.

Darlene's email address is also changing to darlene@beals5.com.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Fw: [weather] Weather station

From: "Russ Chadwick" <crb5@uswest.net>

Date: Wed, 5 Jul 2000 19:25:30 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-94975-2000.07.05-20.29.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here's an application of the 1-Wire weather station on a home wind power unit.

Russ
kb0tvj
>
> > -----Original Message-----
> > From: Dave Mansfield [SMTP:damion@win.bright.net]
> > Subject: [weather] Weather station
> >
> > My weather station sitting at about 70' on my 82' tower
> > http://www.geocities.com/dsmansfi/wind10.html
> >
> > Using Onesix DDE server to shut generator down in high winds
> >
> > Sample graph from weather station on a windy day.
> > http://www.geocities.com/dsmansfi/windgraph.html
> >
> >
> > ---

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] A long experience with the 1-Wire wx station

From: "Russ Chadwick" <crb5@uswest.net>

Date: Wed, 5 Jul 2000 20:43:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-94990-2000.07.05-21.48.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Since there hasn't been much activity on [wxsig] recently, here's my experience from this weekend.

I recently noticed that the error count for wind direction was increasing from a few per week to one or so per hour. This is still not a problem, but during a recent rain storm, I got wind direction errors solid for a few hours. There have been very few error counts for any of the other sensors. I have the anemometer and wind vane south of the garage at the end of about a 30 ' section of cat 5 network cable and I was using one of the 4 twisted pairs. On the north side of the garage, I have the thermometer and the rain gauge at the end of about 50 ' of twisted 3 wire with one of the wires not used.

Dallas Semi has recommended if you are having wind direction problems to connect 470 k ohm across each of the 8 direction reed switches and another 470 k ohm across the DS2407 switch (9 resistors in all). I took the unit down and started to do this and found out that it is a difficult job; it's not as easy as you might think. In retrospect, I don't recommend doing it. On the last reed switch I broke the glass envelop. I also had problems soldering to the little tabs and had problems with those tabs coming loose from the PCB. Even with the broken reed switch, I could initialize with my test setup on the bench. I also could initialize it when it was hooked with clip leads to the inside end of the cat 5 cable. Also worked for several hours this way with no errors. Then I climbed back up the pole and installed it outside and it wouldn't work at all, got constant wind direction errors, but no wind velocity errors.. However, when I removed the branch with the rain gauge and thermometer, I naturally got temperature and rain gauge errors, but, the wind direction worked fine.

At this point, I took down the anemometer and wind vane and checked with the bench setup and things worked fine. So, I decided to replace the anemometer and wind vane with another one that I have. It checked out on the bench and worked fine inside, but gave exactly the same performance as the other one when hooked up outside; constant wind direction errors that would go away when the thermometer and rain gauge was disconnected. At this point, I called it a day.

The next day, I decided to triple the length of the path in the cat 5 cable by going out on one pair, back in on another and than back out on a third. If the problem was some type of reflection, this would at least change it. Before, I did this, I changed pairs just to be sure that the problem was not something funny in one pair. Got the same wind direction errors with the second pair. Hooked up all three wires on the out and back and out arrangement and got the same thing, constant wind direction errors. Then, because it was easy to do, I hooked the three pairs in parallel and, lo and behold, it worked. Then I hooked all four of them in parallel and it has been working for the past day and a half with no errors. One side of each twisted pair is ground and all four are in parallel and the other side is data and all four of them are in parallel. I'm not sure that I can explain why it works so solid now and would not work before.

Russ
kb0tvj

5. [wxsig] RE: Fw: [weather] Weather station

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sat, 8 Jul 2000 00:50:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95346-2000.07.07-23.54.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Russ Chadwick
Sent: Wednesday, July 05, 2000 9:26 PM

Here's an application of the 1-Wire weather station on a home wind
power
unit.

Russ
kb0tvj
>
> > -----Original Message-----
> > From: Dave Mansfield [SMTP:damion@win.bright.net]
> > Subject: [weather] Weather station
> >
> > My weather station sitting at about 70' on my 82' tower
> > http://www.geocities.com/dsmansfi/wind10.html
> >
> > Using Onesix DDE server to shut generator down in high winds
> >
> > Sample graph from weather station on a windy day.
> > http://www.geocities.com/dsmansfi/windgraph.html

This essentially the same installation that I have. Only my
anemometer/van aren't quite up as high as the windcharger. I have some
thoughst on adding a controll to shut down the turbine unde sustained
high winds (we see 100+ mph gusts here at least two or three times
during the Nov-Dec-Jan season and that will eat blades!)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] Rain Gauge arrived

From: "Brian B. Riley" <brianbr@macconnect.com>
Date: Sat, 8 Jul 2000 00:54:28 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95348-2000.07.07-23.58.20--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Well DalSemi was pretty quick. My rain gauge arrived. I plan to
assemble it tomorrow or Sunday. Could someone post their
alignment/calibration procedure for it? Also any suggestions about
whereand how best mounted. I noticed the curved flanges which I assume
would mean friction mounting with hose clamps on a 1.25" mast, but
also saw a channel on the bottom of the housing which looks like it
would take the 1" square stock like the anemometer housing came with
... what is best

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
   <mailto:brianbr@wulfden.org>
   <mailto:n1bq@amsat.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] Velleman HPS5

From: "Brian B. Riley" <brianbr@macconnect.com>
Date: Sat, 8 Jul 2000 01:18:40 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95368-2000.07.08-00.23.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was looking through the recent issue of Nuts and Volts and came
across for a small LCD Oscilloscope made by a company called Velleman.
I checked it out on the web <http://www.velleman-kit.com> and the item
looks interesting. It is a relatively new product apparently
superceding an earlier design the HHS5 which was available both wired
or in kit form. Anyone know anything about this unit?

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
   <mailto:brianbr@wulfden.org>
   <mailto:n1bq@amsat.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] Re: Rain Gauge arrived

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sat, 8 Jul 2000 11:57:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95413-2000.07.08-13.02.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Brian,

Here's the procedure that I would use to calibrate the rain gauge. First,
hook up the circuit board to the T238 1-Wire bus and manually pass the
magnet close to it. You should see the rain count go up by .01 " for each
time that you move the magnet past. If not, then hook the board up to your
computer and run the Dallas Semi Weather station software and repeat the
process with the magnet. If you can't make the count increase with the
magnet, then send Dallas Semi an e-mail describing things and they will tell
you to send the board back and they will send a replacement.

If the counting is OK, then assemble the gauge according to the
instructions. I used twist drills, spun in my fingers, to make a hole in
the rubber covering for the screws. Start with the smallest and move up in
size until the screws will go through the holes without tearing the rubber
waterproofing.

Then to calibrate, put the two calibration screws in all the way and then
back each of them out 7 turns and tighten the lock nuts. Next, get a paper
cup and punch about a dozen pin holes in the bottom for the water to drain
from. Put 16 oz of water in the cup and see what reading you get from the
T238. Each tip (which you can hear) is .01". Should be 1.00" for 16 oz
water, but will probably be less. If so, then you need to adjust the screws
so that the tip action happens sooner, which is more often which is more and
will increase the count. Turning the screws in will make the bucket tip

sooner in the fill process. Then it is trial and error until you get as close as you can. The first one that I did, I wanted to see just how close it was possible to get so I took an long time. Eventually, I got 1.99" for 32 oz of water.

Be sure that you tighten the lock nuts after each adjustment. I was down to quarter turn adjustments on the screws.

I mounted the thing on a pipe with two hose clamps and it has worked fine. However, I've noticed that I occasionally get a double bounce and that gives too many counts. I've got to see what's causing that. However, this is the driest that I've seen in my 30 years living in Colorado and zero on the rain gauge is just exactly the correct reading for what we've had recently. It might be useful to have Will add a feature that would tell you how often the counts increase by more than one in the five second measurement period. That should happen only in heavy rain.

Russ
kb0tvj

----- Original Message -----
From: Brian B. Riley <brianbr@macconnect.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Friday, July 07, 2000 10:54 PM
Subject: [wxsig] Rain Gauge arrived

> Well DalSemi was pretty quick. My rain gauge arrived. I plan to
> assemble it tomorrow or Sunday. Could someone post their
> alignment/calibration procedure for it? Also any suggestions about
> whereand how best mounted. I noticed the curved flanges which I assume
> would mean friction mounting with hose clamps on a 1.25" mast, but
> also saw a channel on the bottom of the housing which looks like it
> would take the 1" square stock like the anemometer housing came with
> ... what is best
>
> --
> Brian B. Riley --> http://members.macconnect.com/~brianbr
>   <mailto:brianbr@wulfden.org>
>   <mailto:n1bq@amsat.org>
>
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] RE: Velleman HPS5

From: "Clay Jackson" <clayj@nwlink.com>
Date: Sun, 9 Jul 2000 17:17:39 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95582-2000.07.09-19.22.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just bought the last one in stock at Vetco (Seattle surplus house). The owner there said he'd sold 5 of 'em in about a week, and none have come back - he was planning on ordering more.

I'll let the list know what I think as I use it for a while.

My "first look" is that it's a pretty good deal for $229.

Clay - N7QNM

> -----Original Message-----
> From: bounce-wxsig-17461@lists.tapr.org
> [mailto:bounce-wxsig-17461@lists.tapr.org]On Behalf Of Brian B. Riley
> Sent: Friday, July 07, 2000 10:19 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Velleman HPS5
>

>
>
> I was looking through the recent issue of Nuts and Volts and came
> across for a small LCD Oscilloscope made by a company called Velleman.
> I checked it out on the web <http://www.velleman-kit.com> and the item
> looks interesting. It is a relatively new product apparently
> superceding an earlier design the HHS5 which was available both wired
> or in kit form. Anyone know anything about this unit?
>
> --
> Brian B. Riley --> http://members.macconnect.com/~brianbr
>   <mailto:brianbr@wulfden.org>
>   <mailto:n1bq@amsat.org>
>
>
>
> ---
> You are currently subscribed to wxsig as: clayj@nwlink.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] RE: Velleman HPS5

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sun, 9 Jul 2000 20:38:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95590-2000.07.09-19.41.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Clay Jackson
> Sent: Sunday, July 09, 2000 8:18 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Velleman HPS5
>
> I just bought the last one in stock at Vetco (Seattle surplus
> house). The owner there said he'd sold 5 of 'em in about a
> week, and none have come back - he was planning on ordering
> more.
>
> I'll let the list know what I think as I use it for a while.
>
> My "first look" is that it's a pretty good deal for $229.

 OK that was $229 as in $199 for the scope plus $30 for the x10 probe?

--
 Brian B. Riley --> http://members.macconnect.com/~brianbr
    <mailto:brianbr@wulfden.org>
    <mailto:n1bq@amsat.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] RE: Velleman HPS5

From: "Clay Jackson" <clayj@nwlink.com>
Date: Sun, 9 Jul 2000 19:34:26 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95603-2000.07.09-21.39.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Almost - $229 for the scope, and $10 for the probe and a set of nicd
batteries.

Clay

> -----Original Message-----
> From: bounce-wxsig-17461@lists.tapr.org
> [mailto:bounce-wxsig-17461@lists.tapr.org]On Behalf Of Brian B. Riley
> Sent: Sunday, July 09, 2000 5:39 PM

> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Velleman HPS5
>
>
>
>
> > -----Original Message-----
> > From: bounce-wxsig-15705@lists.tapr.org
> > [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Clay Jackson
> > Sent: Sunday, July 09, 2000 8:18 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] RE: Velleman HPS5
> >
> > I just bought the last one in stock at Vetco (Seattle surplus
> > house). The owner there said he'd sold 5 of 'em in about a
> > week, and none have come back - he was planning on ordering
> > more.
> >
> > I'll let the list know what I think as I use it for a while.
> >
> > My "first look" is that it's a pretty good deal for $229.
>
> OK that was $229 as in $199 for the scope plus $30 for the x10 probe?
>
> --
> Brian B. Riley --> http://members.macconnect.com/~brianbr
>   <mailto:brianbr@wulfden.org>
>   <mailto:n1bq@amsat.org>
>
>
> ---
> You are currently subscribed to wxsig as: clayj@nwlink.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

12. [wxsig] RE: Velleman HPS5

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sun, 9 Jul 2000 23:01:40 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95607-2000.07.09-22.05.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Clay Jackson
> Sent: Sunday, July 09, 2000 10:34 PM
>
> Almost - $229 for the scope, and $10 for the probe and a set of nicd
> batteries.

 Its advertised in this month's Nuts and Volts by Velleman at $199 and I
found it at Jameco and another place for $189.95 ... the advertised
price for the probe is $30 ... your prices seem strange ...

  73 de brian, N1BQ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Re: A long experience with the 1-Wire wx station

From: David Norris <dave@webaugur.com>
Date: Sun, 09 Jul 2000 22:49:33 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95610-2000.07.09-22.54.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Russ Chadwick wrote:
> the past day and a half with no errors. One side of each twisted pair
> is ground and all four are in parallel and the other side is data and
> all four of them are in parallel. I'm not sure that I can explain why
> it works so solid now and would not work before.

Could it have been RFI/EMI or static (from the friction of the blades in
the wind)? I have experienced various oddities with my weather
instruments due to RFI/EMI and static in/on the cabling. I have since
wound all wires around toroids near the weather station controller.
This was with a Peet Bros Ultimeter 2000 station. The Peet Bros
anemometer has grounds to drain static from the instruments before the
controller. Without that ground the anemometer builds up some serious
static over time. Enough to make in unusable. I've not seen one error
even with 50W directed toward the cables at close proximity since the
toroid. I also, rerouted the cabling away from power lines in the
walls.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] RE: Velleman HPS5

From: "Clay Jackson" <clayj@nwlink.com>
Date: Sun, 9 Jul 2000 21:23:42 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95613-2000.07.09-23.28.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK - so I paid $20 too much ($189+30=219, I paid 239). For that, I got the
scope, 5 NiCds (one of which turned up dead), the probe, and a 500Ma Power
cube.

Vetco's a strange place...

Clay

> -----Original Message-----
> From: bounce-wxsig-17461@lists.tapr.org
> [mailto:bounce-wxsig-17461@lists.tapr.org]On Behalf Of Brian B. Riley
> Sent: Sunday, July 09, 2000 8:02 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Velleman HPS5
>
>
>
>
> > -----Original Message-----
> > From: bounce-wxsig-15705@lists.tapr.org
> > [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Clay Jackson
> > Sent: Sunday, July 09, 2000 10:34 PM
> >
> > Almost - $229 for the scope, and $10 for the probe and a set of nicd
> > batteries.
>
> Its advertised in this month's Nuts and Volts by Velleman at $199 and I
> found it at Jameco and another place for $189.95 ... the advertised
> price for the probe is $30 ... your prices seem strange ...
>
>   73 de brian, N1BQ
>
>
> ---
> You are currently subscribed to wxsig as: clayj@nwlink.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] RE: Velleman HPS5

From: Steve Dimse <k4hg@tapr.org>
Date: Mon, 10 Jul 2000 07:11:29 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95647-2000.07.10-06.16.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 7/9/00 8:17 PM Clay Jackson (clayj@nwlink.com) wrote:

>I just bought the last one in stock at Vetco (Seattle surplus house). The
>owner there said he'd sold 5 of 'em in about a week, and none have come
>back - he was planning on ordering more.
>
>I'll let the list know what I think as I use it for a while.
>
>My "first look" is that it's a pretty good deal for $229.
>
>Clay - N7QNM
>
I got a scopemeter 97 at Dayton for $475. Essential brand new, there was
a never used battery pack, and the LCD still had the protective film on.
The probes were open but in pristine condition. The Buckmaster guy was
selling them, don't know where he got them but he had a couple boxes
full. Incredible deal, and a few months later still working perfectly.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

16. [wxsig] 1-Wire Weather Station Discontinued

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Mon, 10 Jul 2000 10:16:05 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95669-2000.07.10-09.20.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dallas Semiconductor announced on July 7th that the 1-Wire(tm) Weather
Station is no longer available. Here is the message...

- -

From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
Sent: Friday, July 07, 2000 12:54 PM
To: 'weather@ibutton.com'
Subject: [weather] Weather station availablilty

All,

Due to the increased response for the 1-Wire weather station after
recent publications referred to it in some amateur radio
publications, Dallas Semiconductor's supply of WS1 kits was
prematurely depleted. Consequently, the kit disappeared from the
shopping cart.

Dallas expects to post an official memo responding to the situation
and announcing new related sensors on the weather homepage at
http://www.ibutton.com/weather/index.html in the near future. Be
assured that Dallas Semiconductor will continue to maintain the
interest group and weather website as well as technical support.

Meanwhile, you can still order fully assembled and tested 1-Wire
weather stations from Texas Weather Instruments, Inc. at
http://www.texas-weather.com.

And those of you who haven't ordered a rain gauge for your 1-Wire
weather station can still do so at
http://www.ibutton.com/weather/index.html.

Regards,

Dan Awtrey   Staff Engineer
Dallas Semiconductor   Phone: 972-371-6297
Building C   FAX: 972-371-3715
4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
Dallas, TX 75244-3292
http://www.ibutton.com

- -

I have updated the TAPR T-238 web page to reflect the above.

If you made a pre-order of the T-238 kit and was not able to purchase a
Dallas Semiconductor 1-Wire Weather Station, you may cancel your order.
Please contact the TAPR office.

TAPR will continue with the T-238 Kit. Realize that the T-238 can interface
with any of the Dallas Semiconductor 1-Wire (tm) devices. The T-238 is
fully programmable by the user. The T-238 is a general purpose platform and
the 1-Wire Weather Station is one of many potential applications.

Kit Update

The majority of parts have arrived and kitting has started. We are waiting
on two more items to arrive to complete the kits. Please watch the TAPR
T-238 web page for further updates.

 - Steve, N7HPR
   n7hpr@tapr.org

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

17. [wxsig] T-238 status

From: "Brian B. Riley" <brianbr@macconnect.com>
Date: Mon, 10 Jul 2000 13:37:58 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95704-2000.07.10-12.41.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For what it is worth I haven't touched my T-238 in a couple of weeks, no
button changes, no power down, nothing and its still trucking right
along ... that is what I call good solid firmware ... [the author may
take a bow!]

73 de n1bq

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
   <mailto:brianbr@wulfden.org>
   <mailto:n1bq@amsat.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] FW: 1-wire rain gauge heater

From: "Brian B. Riley" <brianbr@macconnect.com>
Date: Mon, 10 Jul 2000 15:53:49 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95717-2000.07.10-14.56.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For those of you who may be interested. I followed up the link for the
one wire rain gauge heater at
<http://www.geocities.com/t_konstali/rain_gauge.htm> . I sent him an
email to clarify some points in his diagrams and schematics and this was
the reply.

-----Original Message-----
From: Torvald Konstali [mailto:tokonsta@online.no]
Sent: Monday, July 10, 2000 3:44 PM
To: Brian B. Riley
Subject: Re: 1-wire rain gauge heater

Hello again!

The resistor from 12vdc to the BC141 transistor   is 10 k ohm.

D0 is not critical, I used a small signal diode (1N914/1N4148).

T1 and T2 are not critical, I used BD241 general purpose NPN, 40W, 3A
45V
Transistor, but any similar would do!

If you look at the detailed picture of the heater, you will see that I
have
isulated the vertical walls of the Gauge with a 3 mm thick foam plate. I
dont know how necessary this is.

Good luck with your project, I look foreward to hear from you again!

Torvald

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

19. [wxsig] Possible sensor for the T238

From: Shrrah Castillo <shrrah@fismat1.fcfm.buap.mx>
Date: Mon, 10 Jul 2000 16:33:17 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95728-2000.07.10-16.41.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello everyone on the WXSIG

I am sending an attached pdf file that is supposed to be a Cloud charge
detector, perhaps this device may be used to detect storms and using a
1 wire A/D converter can be connected to the WX station.

73, Shrrah   XE1TD
[Attachment: cloud.pdf; application/pdf; 59,661 bytes]

20. [wxsig] RE: T-238 status

From: William Beals <will@beals5.com>
Date: Mon, 10 Jul 2000 20:12:16 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95767-2000.07.10-23.19.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

Thanks for the nice note. We all tend to concentrate on problems (which is good), but it is nice to know that the system mostly works!

will

-----Original Message-----
From: Brian B. Riley [SMTP:brianbr@macconnect.com]
Sent: Monday, July 10, 2000 11:38 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] T-238 status

For what it is worth I haven't touched my T-238 in a couple of weeks, no
button changes, no power down, nothing and its still trucking right
along ... that is what I call good solid firmware ... [the author may
take a bow!]

73 de n1bq

--
Brian B. Riley --> http://members.macconnect.com/~brianbr
   <mailto:brianbr@wulfden.org>
   <mailto:n1bq@amsat.org>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(CH$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
```

```
M="!'<F]U< !33510``'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`9````4D4Z(%MW>'-I
M9UT@5"TR,S@@<W1A='5S`-T``06 `P`.````T <```H`% `,`! ``0`9`0$@
M@ ,`#@```- '!P`*`!0`"P`3``$`&P$!"8 !`"$````X,T8T,$(P,3E!-39$
M-#$Q03@U-C P,#!%.#E",T,P.0#R!@$#D 8`M 8```"$````+``(```0````L`
M(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`H"-F
M;]WJOP$>`' ``0```!D```!213H@6W=X<VEG72!4+3(S."!S=&%T=7,`````
M`@%Q``$````6`````;_JW6]<`0OTA%::$=2H5@``Z)L\"0```@`># $````%
M````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&$.!1
M]#P#``<0E@(``!X`"! !````90```$)224%..E1(04Y+4T9/4E1(14Y)0T5.
M3U1%5T5!3$Q414Y$5$]#3TY#14Y44D%414].4%)/0DQ%35,H5TA)0TA)4T=/
M3T0I+$)55$E425-.24-%5$]+3D]75$A!5%1(15-94U0``````@$)$ $````"<
M`P``F ,``!H%``!,6D9U,"!BJS\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"
M@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@8P!0
M"P-C`$$+8$!N9S$P,S,+IB!R0@<A;CH*H@J$"H!4.0]P;FL$( (0!<!T:!1E
M( ,`8QCA;W1E\"X@(%<8X = `R 9<-,4T!BP;R %H&X9( (P5')A&7 @`B @
M$3!OB0)@96T$("AW:!D01&@@! `@9V\$<"G0+"!B=05 :1UA!"#[&0,:@6L9
M4 ?@&, ;,!BSR'-Y<QEP;2 $8!]@L&QY('<%L!A0(1=:#P/P&@`76@KT;&DS
M-I\!0!6@`4 ;H1EP8W00=% Q-B M)$)/!1!G#PN !T %T >0<V%G93\D0Q=6
M(U0C(0L3(U9I+1@Q-#0!0"*@,3@PQP% #- GXV(@1@-A%T!=#))B%M46X!F0
M4@,090$@`%M33510.F);%P(K4$ `P1JQ;B.!+OD%H&U=%U4I$ 9@`C I=R)-
M`B!D87D=($IU/Q_Q%B =( '0*' NX#$ZE#,X#^!-+,=4;REW4%1!4%(9L%@&
M`'#S!9 ',2!)`C $D >0!4 21P-@=7 LR'5B:B,C@2EW6W=X`)!G7;DP@"TR
M+[$?8!LP=0\P?R7_)PDBI NV%V,*XPJ 1G\%L1Q 'M$=A" A&, R,"#U#W!V
M"? G'N$(8 ]@"8#_'Z @`#4T"X 9X!JA,P`;X/T;8&8@$ G@&% =(!E0%U3_
M'4$:@ .@#V$6``>0/:(;D-,>@ 20(&0>@&X]HAC _0N 9QG@&E$=@ 0@'V A
M4;T8L'(5$!2Q0) DH6@CH.\78P= `B! D"Y#,!ZD.B)['L(ZL&,9\AS2'S &
M\&GC&F GL')M=PK &.!#,FI;&,)A'5!H!;$`P'F[%U0!D&L9T1TP'H A++89
M%V,W,S_ &.$Q8G%O%UHEQBH-)$ ^.L "0' X.B\O!X &T 20<RZY*]PO?BM5
M.)49H#P`P#<#$!J *T=W+K %<6XNF06P9SY.?TEB0&$<`-\;,%!Y4L]*4275
M60A@&>"]1<%C"' )< (P'_%S,\"?!/),L!IC-,,9X',Z(!#33*$'0'- +(%P
M-= $D.\Z\"QR%[4:D'4`@%8&'S#G&D)'T17A:R ;\$\A&G(;&^ ZX2TTPR?0
M-3<P^#=-0"*@'V!,X &0$3 74'(76A'Q`%Z0`P`0$ `````#`!$0``````,`
M@!#_____0 `', #W)TW=ZK\!0 `(, #W)TW=ZK\!"P``@ @@!@``````P ``
M`````$8``````X4````````#``* "" &``````# ````````1@`````0A0``
M`````,`!8 (( 8``````, ```````!&`````%*%``"W#0```P`)@ @@!@``
M````P ```````$8``````84````````>`"* "" &``````# ````````1@``
M``!4A0```0````0````X+C `"P`F@ @@!@``````P ```````$8`````#H4`
M```````#`"> "" &``````# ````````1@`````1A0````````,`*8 (( 8`
M``````, ```````!&`````!B%````````'@`X@ @@!@``````P ```````$8`
M````-H4```$````!`````````!X`.8 (( 8``````, ```````!&`````#>%
M```!`````0`````````>`#J "" &``````# ````````1@`````XA0```0``
G``$`````````'@`]``$````%````4D4Z( `````#``TT_3<``,V/
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

21. [wxsig] Re: A long experience with the 1-Wire wx station

From: William Beals <will@beals5.com>
Date: Mon, 10 Jul 2000 20:07:48 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95768-2000.07.10-23.19.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ (and all):

Dave may be on to something. In my case I have my weather station tied through the RS-232 cable to the TNC and finally the radio which is eventually connected to a grounded power supply. It still bugs me that Russ is having so many problems that I can't duplicate. Russ, are you grounded? In my case I have 50 watts of 150MHz as well as 1 watt of 14GHz right next to the cable.

will

-----Original Message-----
From: David Norris [SMTP:dave@webaugur.com]
Sent: Sunday, July 09, 2000 9:50 PM

To: TAPR WX Special Interest Group
Subject: [wxsig] Re: A long experience with the 1-Wire wx station

> Russ Chadwick wrote:
> the past day and a half with no errors. One side of each twisted pair
> is ground and all four are in parallel and the other side is data and
> all four of them are in parallel. I'm not sure that I can explain why
> it works so solid now and would not work before.

Could it have been RFI/EMI or static (from the friction of the blades in
the wind)? I have experienced various oddities with my weather
instruments due to RFI/EMI and static in/on the cabling. I have since
wound all wires around toroids near the weather station controller.
This was with a Peet Bros Ultimeter 2000 station. The Peet Bros
anemometer has grounds to drain static from the instruments before the
controller. Without that ground the anemometer builds up some serious
static over time. Enough to make in unusable. I've not seen one error
even with 50W directed toward the cables at close proximity since the
toroid. I also, rerouted the cabling away from power lines in the
walls.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(C($`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`]````4D4Z(%MW>'-I
M9UT@4F4Z($$@;&]N9R!E>'!E<FEE;F-E('=I=&@@=&AE(#$M5VER92!W>"!S
M=&%T:6]N`.@4`06 `P`.````T <```H`% ``'`# ``0`T`0$@@ ,`#@```- '
M!P`*`!0`! `K``$`+ $!"8 !`"$````W0D8T,$(P,3E!-39$-#$Q03@U-C P
M,#!%.#E",T,P.0``!P$#D 8`; D``"$````+``(``0````L`(P```````P`F
M```````+`"D```````,`+@```````P`V``````! `#D`8']HS]SJOP$>`' `
M`0```#T```!213H@6W=X<VEG72!293H@02!L;VYG(&5X<&5R:65N8V4@=VET
M:"!T:&4@,2U7:7)E('=X('-T871I;VX``````@%Q``$`````6`````;_JW,]H
M`0OT?%::$=2H5@``Z)L\"0``'@`># $````%````4TU44 `````>`!\,`0``
M`! ```!W:6QL0&)E86QS-2YC;VT``P`&$"]XQN0#``<0! 8``!X`"! !````
M90```%)54U,H04Y$04Q,*3I$059%34%90D5/3E1/4T]-151(24Y'24Y-64-!
M4T5)2$%614U95T5!5$A%4E-4051)3TY4245$5$A23U5'2%1(15)3+3(S,D-!
M0DQ%5$]42$543D-!3D0``````@$)$ $````P!@``+ 8``*)``!,6D9U31K8
M:S\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"@T,`4 [F<')Q,@_F?1,*@ C(
M(#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@8P!0"P-C`$$+8,!N9S$P,S,+I@?P
M2G4$$2@`<&0@!T!L'"DZ"J(*A J 1&%VQ&4@`,!Y(&(8T (@8"!T;R!S`W /
ML&A!"X!G+B @20.@;=D9$&-A#Z :<" /<!C"\1D0=V5A&@`$D!FP`9!\=&D9
M8@B0%W :``-@=0QG:!T1&-!24RTR?C,18!K@`F 8T!F1':)4[$Y#%X 7868+
M@!>1&1#Q':)R860<D!O &A /8+(@! `@91C `C!U']-I!:!N;@60=!SR&:!A
MGB)P A@%- <\7!O&]"I'#%U< M0>1I0205]QQ0`Q #(&(=8 0@!X =$7\;
M\!;D(2$;41HA&;$8X6[K&1 1,&\><6T$("5S&S"I&N!N)P5 9"/P;"#@;1OP
M91I1%O(L%X)<""V>0A@(N<_&F\8P34/T IW&_!T!"!O9B Q\2P`34AZ%X $
M(!O0),'-+3$Q+",L@S1'+0$%$'<=< 5 (C!X!4 >M1Y3+C\7Z@/P%Z 7Z@KT
M*, S-G\!0!6@`4 G,2)@(E 0=#'H-B M-")/+N$?L@70X0>0<V%G930C%^8S
M-*<S`0L3,S9I+2Z - % <2C ,3@P`4 ,T#?#8MP@1@-A%] ,DF(/T!BA.FD7
M<$X%L 40!"!;4Z!-5% Z9!BQ0!O0+&)A'6 (<"X%H&U=WQ?E./ &8 (P.5=3
M(R$9`,DID$IU'_$P.2F0`="1.% @.3HL`5!-/#<$5&\Y5U1!4%(@]%=8!@!P
M!9 ',2K1(F!3"7 <4"!''4%P/#AUC&)J(D$Y5UMW> "0I&==!_!E.@_@(D`
MSR:!+U!!, B!;F,8T /PPQH`'9,Q+5=I*<%$(/\<1C7/-MHRA`NV%_,*XPJ
M*CX6Y$,/<&0#\&-K_QO ,S(7U4L`':(*L$(!/<&W'U,BT]P;"R@1?-N&:#O
M!) #8 ^0&E%/(C 9L#H0[QE!+* ;X"#Q= /Q(F(*L/]&L$JF(2$B]$VD),$"
M$ AP_RFC"X!-$2!@%Z M<!]3':+_,T <$T_"(2$[$ &0'U)*IK=2IRR1' %M
M4RX:4B=7@/].L"1Q"' E52@313(+8B"QUGE11P5 =P6P:P0@)K'_&< HP!=P

```
M3K 'X!=26Z ^(/]<<EN$&2$"$ EP,%L(45U!'UMQ&U,9, GP!_!&22_<14T;
M, 6Q'%-C%S #4O\=DP-0(. <@U<D&2 +8 $`WR7Q1X4=H@/P%- I*K(;1'M%
M2!=P=@K ') 7`!E09/\@@!S1+4%&`ANH%^0+@!Q0_')U!X ",%5Q"E 9@F!F
M]Q=2814+@"\98B_5&B4;1/\`D$6Q,,52%"3!`_!!X2FA_U(3&9 #8#H0!" B
M, K!9!-_&^TB`6B0!O >@#O02I54WQH0+4$M,D8"(M!0"> %0.9"`V $(%5L
M'( 9X1PA_SZC'%4:47' &-!RQQ?D`'!_)X 9TAPA#W!1UB>A&:!D_R!@4W%A
M%6&7:&I>!!V2%^3_<*I X$8!"& O<26"4?4=HO]V*23P`Q!NX2/P&;,9L 9Q
M]V9!%^1A%6\8P&]!!W$:4>Y%3K =8R;":U-3(R 7`/\P$UBB&,%9`V B`B!E
M(4[R[Q?D(5)%Y"P`5RB 1K$B5=\L, L@+[AN`05 8PD`&P']`)S%X!W!&`!D0
M;'-Z2&Z4_VO3!T 9P"F0"7 =02)C:SC_%X L,!D089,CA&N18V-Z2+\L,!>@
M3S(7ZC0@2I4L.>K32C4YTF4G!"!7.W T$(,;0 ) <#HO+W>2`.HN.VHO.Q(O
MD$\;])%_QY*,1""39DE#47-0`P#?@"$U,$&%(C %0$YHL!DP292R-#$!T#,Y
MDV9%_"U-"W #(([P.Q^.+#6U]EDJ`2FR8PAP"7 ",!_Q_2/@8@3R&3 B@T0C
M+2%$L-9WF/&)T4 [\7 7``20_QC FZ@_\('AGE=^P4W#8R%^;DO@)X":<AF1
M'H 8L2T#1",WL#4W,#=-0%\HP!Q03S !D!$P+@6P9PL7ZA'Q`*;P`P`0$ ``
M```#`!$0``````,`@!#_____0 `',, ;'&'<ZK\!0 `(,, ;'&'<ZK\!"P``
M@ @@!@``````P ```````$8``````X4```````#``* "" &``````# ````
M````1@`````0A0````````,`!8 (( 8``````, ```````!&`````%*%``"W
M#0```P`)@ @@!@``````P ```````$8``````84````````>`"* "" &````
M``# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````P ``
M`````$8`````#H4````````#`"> "" &``````# ````````1@`````1A0``
M``````,`*8 (( 8``````, ```````!&`````!B%`````````'@`X@ @@!@``
M````P ```````$8`````-H4```$````!`````````!X`.8 (( 8``````, `
M``````!&````#>%```!`````0`````````>`#J "" &``````# ````````
M1@`````XA0```0````$`````````'@`]``$````%````4D4Z( `````#``TT
&_3<``,N-
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

22. [wxsig] Ligtning detector

From: William Beals <will@beals5.com>
Date: Mon, 10 Jul 2000 21:11:05 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95769-2000.07.10-23.19.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Shrrah:

Thanks for the information. We have been tinkering around with the idea of a ligtning detector although it is still a bit far out yet. Your suggestion is a new approach I wasn't aware of. Previously we had been looking at sensors that had a digital pulse for every lighting bolt they detected within a certain range. I'm sure we'll have good debate on which to use when the time comes!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Question for the List Gurus

From: Hosking William-P05328 <Bill.Hosking@motorola.com>
Date: Tue, 11 Jul 2000 07:08:42 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95835-2000.07.11-09.13.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm seeing something on digests that I don't see in "normal" emails. Attachments come through as encoded text. For example, Shrrah's recent PDF attachment generated 20+ pages of text. I telnet into my IP in the mornings from work and dump the digest to my local printer here in the office.

If that's the price I have to pay to get wxsig so be it. Just curious.

Bill W7JSW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] RE: Question for the List Gurus

From: "Steven R. Bible" <steveb@dandin.com>
Date: Tue, 11 Jul 2000 10:41:50 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95837-2000.07.11-09.46.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill,

I am the admin for this list. The Lyris listserver passes the attachment
unharmed. I received the attachment fine (I use Outlook 2000).

Is there a possiblity that the computer you received (the email client) it
on was not able to decode the attachment? There are several attachment
protocols, it is possible that the one Shrrah used was not available on your
email client.

 - Steve, N7HPR
   n7hpr@tapr.org

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Hosking
> William-P05328
> Sent: Tuesday, July 11, 2000 10:09 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Question for the List Gurus
>
>
> I'm seeing something on digests that I don't see in "normal" emails.
> Attachments come through as encoded text. For example, Shrrah's recent PDF
> attachment generated 20+ pages of text. I telnet into my IP in
> the mornings
> from work and dump the digest to my local printer here in the office.
> If that's the price I have to pay to get wxsig so be it. Just curious.
>
> Bill W7JSW
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] RE: Question for the List Gurus

From: John Koster <w9ddd@tapr.org>
Date: Tue, 11 Jul 2000 11:00:26 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95858-2000.07.11-11.04.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is it possible that Lyris does something different for the digest? Imagine
the digest has 10 messages and 3 have attachments ...   how do you handle
them? All attached to the digest "envelope" or encoded in the body of the
each message of the digest. ????

Is it possible that the process of spooling to the printer caused it to
happen?

John Koster, W9DDD
<w9ddd@tapr.org>

  ==========
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Tue, 11 Jul 2000, Steven R. Bible wrote:

> Bill,
>
> I am the admin for this list. The Lyris listserver passes the attachment
> unharmed. I received the attachment fine (I use Outlook 2000).
>
> Is there a possiblity that the computer you received (the email client) it
> on was not able to decode the attachment? There are several attachment
> protocols, it is possible that the one Shrrah used was not available on your
> email client.
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>
>
> > -----Original Message-----
> > From: bounce-wxsig-15059@lists.tapr.org
> > [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Hosking
> > William-P05328
> > Sent: Tuesday, July 11, 2000 10:09 AM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Question for the List Gurus
> >
> >
> > I'm seeing something on digests that I don't see in "normal" emails.
> > Attachments come through as encoded text. For example, Shrrah's recent PDF
> > attachment generated 20+ pages of text. I telnet into my IP in
> > the mornings
> > from work and dump the digest to my local printer here in the office.
> > If that's the price I have to pay to get wxsig so be it. Just curious.
> >
> > Bill W7JSW
> >
> > ---
> > You are currently subscribed to wxsig as: srbible@gate.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

26. [wxsig] RE: Question for the List Gurus

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 11 Jul 2000 12:26:42 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95864-2000.07.11-11.31.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Opps, should have paid closer attention to the fact you are mentioning a
digest. I'll look into this. Since I received the attachment but not in a
digest.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of John Koster
> Sent: Tuesday, July 11, 2000 12:00 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Question for the List Gurus
>
>
> Is it possible that Lyris does something different for the digest? Imagine
> the digest has 10 messages and 3 have attachments ...   how do you handle
> them? All attached to the digest "envelope" or encoded in the body of the
> each message of the digest. ????

>
> Is it possible that the process of spooling to the printer caused it to
> happen?
>
> John Koster, W9DDD
> <w9ddd@tapr.org>
>
>   ==
> None of the above represents the opinion or policy of anyone or any entity
> other than John Koster unless expressly so stated above.
>
> On Tue, 11 Jul 2000, Steven R. Bible wrote:
>
> > Bill,
> >
> > I am the admin for this list. The Lyris listserver passes the
> attachment
> > unharmed. I received the attachment fine (I use Outlook 2000).
> >
> > Is there a possiblity that the computer you received (the email
> client) it
> > on was not able to decode the attachment? There are several attachment
> > protocols, it is possible that the one Shrrah used was not
> available on your
> > email client.
> >
> > - Steve, N7HPR
> >   n7hpr@tapr.org
> >
> >
> > > -----Original Message-----
> > > From: bounce-wxsig-15059@lists.tapr.org
> > > [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Hosking
> > > William-P05328
> > > Sent: Tuesday, July 11, 2000 10:09 AM
> > > To: TAPR WX Special Interest Group
> > > Subject: [wxsig] Question for the List Gurus
> > >
> > >
> > > I'm seeing something on digests that I don't see in "normal" emails.
> > > Attachments come through as encoded text. For example,
> Shrrah's recent PDF
> > > attachment generated 20+ pages of text. I telnet into my IP in
> > > the mornings
> > > from work and dump the digest to my local printer here in the office.
> > > If that's the price I have to pay to get wxsig so be it. Just curious.
> > >
> > > Bill W7JSW
> > >
> > > ---
> > > You are currently subscribed to wxsig as: srbible@gate.net
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> > ---
> > You are currently subscribed to wxsig as: w9ddd@tapr.org
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

27. [wxsig] WS-1 kit status

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Tue, 11 Jul 2000 13:58:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-95896-2000.07.11-14.05.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yo,
I'm back from sabbatical and was about to order one or two more weather
station kits.
I had assembled and installed the one I had at my folks place in Wyoming so
I no longer have one.
The revelation that DS has sold off all the kits leaves me in the cold.
This will force me to close the chapter and move on as I'm too cheap to pay
MSRP on one of these.
Apologies offered.

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

28. [wxsig] RE: WS-1 kit status

From: William Beals <will@beals5.com>
Date: Tue, 11 Jul 2000 21:41:36 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-95980-2000.07.11-22.55.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kyle:

Things look a bit bleak, but not all hope is lost. Russ is already looking
at alternatives to the Dallas Sensor that will still be cheap and hopefully
even better. Check the website every once in a while and see if we have
alternatives listed. Hope to hear from you again in the future.

will

-----Original Message-----
From: Ehler, Kyle [SMTP:kehler@lsil.com]
Sent: Tuesday, July 11, 2000 12:58 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] WS-1 kit status

Yo,
I'm back from sabbatical and was about to order one or two more weather
station kits.
I had assembled and installed the one I had at my folks place in Wyoming so
I no longer have one.
The revelation that DS has sold off all the kits leaves me in the cold.
This will force me to close the chapter and move on as I'm too cheap to pay
MSRP on one of these.
Apologies offered.

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315
 << File: ATT00001.html >>

begin 600 WINMAIL.DAT
M>)\^(@`#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`<````4D4Z(%MW>'-I
M9UT@5U,M,2!K:70@<W1A='5S`"\)`06 `P`.````T <'``L`%0`I`"0``@!-

```
M`0$@@ ,`#@```- '!P`+`!4`)P`P``(`5P$!"8 !`"$````R,T(X,S T0S9$
M-3=$-#$Q03@U-C P,#!%.#E",T,P.0#T!@$#D 8`? <``"$````+``(``0``
M``L`(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`
MX"LT%+/KOP$>`' ``0```!P```!213H@6W=X<VEG72!74RTQ(&MI="!S=&%T
M=7,``@%Q``$````6`````;_KLQ0T3#"X)%=M$=2H5@``Z)L\"0``'@`># $`
M```%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&
M$$P3PVP#``<070,``!X`"! !````90```$M93$4Z5$A)3D=33$]/2T%"251"
M3$5!2RQ"551.3U1!3$Q(3U!%25-,3U-44E534TE304Q214%$64Q/3TM)3D=!
M5$%,5$523D%4259%4U1/5$A%1$%,3$%34T5.4T]25$A!5%<``````@$)$ $`
M``!D! ``8 0``"8&``!,6D9UOI6GSC\`"@$#`?<"I /C`@!C:,$*P'-E=# @
M!Q,"@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@
M8P!0"P-C`$$+8$!N9S$P,S,+IB#@2WEL93H*H@J$"H T5&@+@&<$( D`;VM@
M(&$@8FD%0 )@92AA:RP8T'4%0&YO!P5 !T #(&AO<&4@0P0`&&%S="X@!_!U
MCP01&J$'0 EP861Y&&,W&"$8L!GR= 21',!I=JD'D71O';!H&H!$&A'^809"
M`( %L1WP',$#\!HANQKP'W)B&H /8!E <!BPLQ30&D-F=1H@'"!E'8!?`Z @
M$ ) !) ;$4,>`&/C&* =\G=E8@"0'1 A<G9R'" "(&,:@0.@&,!WWQ@0%Q @
MDP^@&H%F(O$:0+9A'8 <[&P$`!T09!L1/D@:8AW!(%$%P -2('E["& 8L&<+
M<20B'?(A('3Y"'!E+A=*'V(72@KT)N#\,S8!0!6@`4 1,!G@!9!"=!!T,38@
M+2W23[T%$&<+@ = != 'D',HT'YE+=,71BSD++$+$RSF:3 M,30T`4 FX#$X
MCC !0 S0,7-B($8#84L7, R28@_016@7$'(#&7 6\B!;4TU44$@Z:V4SHD!L
M`)!L<BX%H&U=%T4RH!ZA=(4S!U0*4'-D87D9<.9*(3 <(#$Q&7 !T#(``3?@
M,CHU."!030DUMU1O-HA!4%(@+%=8!@`:<&,',2!)+P(P!) 'D 5 1P-@=7 Q
M-;AU8FHM$3,'6W=2> "09UTZ@%,Q8"#_%+ %0!KP', ;4"]_,(HL-(\+MA=3
M"N,*@%EO+!=$]$DG*'!B`- 8H"A#+N"V8D-@'6!C+H$@HG<><?\!H A@!4 =
MP06P!($CT1J _1[B=QW0!& )<"+Q', >`+9R%T0^PFD"(#YR<RH%_DDEL2#
M'G /H ;0%Q!)8?\@L0N /L$:($GQ'?)&(DDES05 ;1P@`A!L:P0@"U'U) 17
M*)!M'((>T$C&&=#_&&$6`$7Q)<-&(2H%& `:@-\)<!V "V!((Q\31 7P#W#K
M!" >T&P@P&\!(!H#'?+_2'(88!E '8('@"DF".$G,.\7IP0@'V,"$'(D`5-A
M'<'^8QK1)Z%3T@]P!3!%\2"B_P1@3Q-)<3LP0S$=P%7Q(%.;'<$*L'D71 7@
M4E!7LI]&(R5P'?$/H"H%07 (\?\N4 >14>$[<50V%T0T`S.3E1L@:Q<!+C3,
M(#P`P,\#$!W -*!>+VT^&R!;%7\$$";Q`'!1`0>0+D #H$5/%@`+@ G@1X5,
M4TD@3-U;L6,B4 6P6X!R2!,71/PS-S'@![ ;$ @`(I$(`(,<`!=$52Y3+D$;
M$7Y71& 8$ &0,^$`<1YQ()(V`< R-A=$4&@;$ HS+:$V+% @.#8U8C<71$9A
M>&D8:P`YEVGO:9!I(#5!Q3P\,K E)*$Z#^!45#A!,#'0+FAT;0,@/F$`%T0%
M$?$`;U #`! 0``````,`$1 "`````P" $/____] ``<P0*-EU++KOP% ``@P
M0*-EU++KOP$+``" "" &`````# ````````1@`````#A0````````,``H (
M( 8``````, `````!&`````!"%`````````P`%@ @@!@`````P ``````
M`$8`````4H4``+<-```#``F "" &`````# ````````1@`````!A0``````
M`!X`(H (( 8``````, `````!&`````%2%```!````! ```#@N, `+`":
M"" &`````# ````````1@`````.A0````````,`)X (( 8``````, `````
M``!&`````!&%`````````P`I@ @@!@`````P ```````$8`````&(4`````
M```>`#B "" &`````# ````````1@`````VA0```0````$`````````'@`Y
M@ @@!@`````P ```````$8`````-X4```$````!`````````!X`.H (( 8`
M``````, `````!&`````#B%```!`````0`````````>`#T``0````4```!2
113H@``````,`#33]-P``9LV%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

29. [wxsig] radiation shield

From: smbren@iname.com
Date: Wed, 12 Jul 2000 14:03:46 -0400 (EDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96148-2000.07.12-13.08.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I already have the Dallas Semiconductor WX station and will order the T-238 kit soon. There is apparently no igate in this area (Big Bend -- West Texas), but there is a ham digipeater that links to NWS Midland Forecast Office. I will try to hit that repeater.

How can I make a homebrew radiation shield?

Steve Brennecke
KB5SJU

Get free personalized email at http://email.lycos.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] Re: radiation shield

From: jeffa@ix.netcom.com
Date: Wed, 12 Jul 2000 17:01:27 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96180-2000.07.12-16.06.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just joined the list (T-238 on order). What's this about a shield requirement?

Thanks for any info you can provide.

- Jeff, WA6AHL

TAPR WX Special Interest Group <wxsig@lists.tapr.org> wrote:
> I already have the Dallas Semiconductor WX station and will order the T-238 kit soon. There is apparently no igate in this area (Big Bend -- West Texas), but there is a ham digipeater that links to NWS Midland Forecast Office. I will try to hit that repeater.

How can I make a homebrew radiation shield?

Steve Brennecke
KB5SJU

Get free personalized email at http://email.lycos.com

You are currently subscribed to wxsig as: jeffa@ix.netcom.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

31. [wxsig] Pine

From: Shrrah Castillo <shrrah@fismat1.fcfm.buap.mx>
Date: Wed, 12 Jul 2000 16:02:42 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96182-2000.07.12-16.09.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello

Sorry for the troubles with the PDF attached file that I sent on monday, I sent it using the program PINE version 3.96 on a Sun Sparc Solaris 2.6, I use Eudora at home for reading Mail and des-attaching files without troubles.

73, Shrrah XE1TD

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] Re: Pine

From: John Koster <w9ddd@tapr.org>
Date: Wed, 12 Jul 2000 16:10:25 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96183-2000.07.12-16.14.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I use pine 4.2 on BSDI?.? and have no problems with attachments unless I forget to actually attach. Don't recall what versions were on this box before, but I've used pine since '89 or so. Perhaps something isn't confiured right, but don't know what off the top of my head.

John Koster, W9DDD
<w9ddd@tapr.org>

==========
None of the above represents the opinion or policy of anyone or any entity other than John Koster unless expressly so stated above.

On Wed, 12 Jul 2000, Shrrah Castillo wrote:

> Hello

>
> Sorry for the troubles with the PDF attached file that I sent on monday, I
> sent it using the program PINE version 3.96 on a Sun Sparc Solaris 2.6, I
> use Eudora at home for reading Mail and des-attaching files without
> troubles.
>
> 73, Shrrah   XE1TD
>
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

33. [wxsig] Re: radiation shield

From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 12 Jul 2000 17:23:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96195-2000.07.12-18.28.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> How can I make a homebrew radiation shield?
>
> Steve Brennecke
> KB5SJU
>

I've made four radiation shields to shield the temperature (and soon
humidity) sensors from solar insolation. If the Dallas 1-Wire wx station is
placed in the sun, it will have errors approaching 20 deg F. This shield
prevents thw sun from shining on the sensor and lets the cross wind carry
away the heat due to the direct sun. I've written up how to do this, but
need to add the part about building the mount.

I have three pictures of the shield and mounting. It will mount on a 1"x1"
or larger square tube. I wouldn't mount it next to the anemometer because
it could affect the wind being measured. My pictures are all bigger than
the 100 KB limit for e-mails to the wxsig. So, if anyone would like the
pictures, just send me an e-mail and I'll send the pictures back to you.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

34. [wxsig] RE: radiation shield

From: William Beals <will@beals5.com>
Date: Wed, 12 Jul 2000 20:21:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96230-2000.07.12-21.38.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I have the instructions and pictures from Russ and need to get them on the
website. I will try for this weekend at the latest. I am in the process
of making a few changes to the website structure to accomodate more pages
(using frames) and this is taking a bit more time than adding a single
extra page.

Jeff: The radion shield is NOT required--but a good idea if you want to
have accurate readings. The temperature sensor in the Dallas outdoor unit
can get pretty innacurate if the wrong conditions exist (as explained by
Russ) and the radiation shield Russ has made is a way to get much better
data transmitted.

will

-----Original Message-----
From: smbren@iname.com [SMTP:smbren@iname.com]
Sent: Wednesday, July 12, 2000 12:04 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] radiation shield

I already have the Dallas Semiconductor WX station and will order the T-238 kit soon. There is apparently no igate in this area (Big Bend -- West Texas), but there is a ham digipeater that links to NWS Midland Forecast Office. I will try to hit that repeater.

How can I make a homebrew radiation shield?

Steve Brennecke
KB5SJU

Get free personalized email at http://email.lycos.com

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(B("`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, ,````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````V-D`02 `0`=````4D4Z(%MW>'-I
M9UT@<F%D:6%T:6]N('-H:65L9 !/"@$%@ ,`#@```- '!P`,`!0`%0`?``,`
M-0$!(( #``X```#0!P<`# `4`!4''P`#`#4!`0F `0`A````-#4Q.3<Q.#@R
M,S4X1#0Q,4$X-38P,# P13@Y0C-#,#D`T@8!`Y &`! (```A````"P`"``$`
M```+`",```````,`)@``````"P`I```````#`"X```````,`-@``````0 `Y
M``!VSPYQ[+\!'@!P``$````=````4D4Z(%MW>'-I9UT@<F%D:6%T:6]N('-H
M:65L9 `````"``7$``0```!8````!O^QPPKN(<1E'6",1U*A6``#HFSP)```>
M`!X,`0````4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O
M;0`#``80N+S)`@,`!Q!Y! ``'@`($ $```!E````1D],2U,Z24A!5D542$5)
M3E-44E5#5$E/3E-!3D1024-455)%4T923TU255-304Y$3D5%1%1/1T545$A%
M34].5$A%5T5"4TE414E724Q,5%)91D]25$A)4U=%14M%3D1!5%1(10`````"
M`0D0`0```/,$``#O! ``5@<``$Q:1G4*R$B^`P`*``)C<&<Q,C4^,@#T`?<"
MI /C`@!C:,$*P'-E=# @!Q,"@T,`4 ^F<')Q,A"F?;,*@ C((#L);PXP-0*
M)0J!=@B0=VL+@&0T;0Q@8P!0"P-C`$$+8&Z1#A P,S,+IB!&!O X:W,Z"J(*
MA J 22#!$#!V92!T:!D@"X#(<W1R%=!T:0(@!"#1`'!D(' -X'0(< >1VP-2
M!_!U!!$:4FX)X!IP\'1O(&<0<!DR&U "(!$9,W=E8@"0=&4N;" @&- #\&P#
M(!FP>9\;$ 6Q&4 $`!UQ96L)\/4:<&$<HR +8!W0&: =\YYA&U +@!DS$?!O
M8P>0L00@;V8@`, 5<6<:0'\;$ ?1$"$6P >1'%$=22#_&:0:T1Q"`- %H 1A
M(&$B0.L%L"&!82-B*!N (H(#4/LA``>0*1I#'Q,?,0&0(G5^8AW )@09\ >
M&3$#D6$L9&0BA";B;!D@97A7&; BP"9B+A@:2@$1.KT>`%0942= *E =$7,?
M((QE;!IP'S%.3U0M0!!E<75I"7$M+6+F=05 (L!G;P1P&7 !`/,BP :0('D(
M8!UP`' <H?\<8!CS)6$(<"72"7 M81; SG,=\2T2'=!M< 20'^#?)/(08 "
M!;$A-40'0 M@VR(!+U!D+[ %P'4#``5 WF,#D1R"$? 0<'0>L N _FX`T#&T
M,$$=0P-@(I$%H+\5D!W &@,K, 0`!4 H-.'W*S +4QPA8AZP&W(GEBTT_Q_@
M+8D;<Q P!" `P $`*#*O(L PL!ZP'%5M%=!H*/![-H$$D" EP2+ *U$`@&W[
M'< =T&0=\1@:'D(8&@KT\&QI,S8!0!9@`4 AH<<=T!G@$30Q-B O($/Q^D\%
M$&<+@ = != AX29Q/T/S&!9#!$+1"Q-#!FDM&#$T- % 0E Q.##W`4 ,T$>3
M8A>@`V$8``R2EF(0D#^08@EP;D!$@04'@"XE@2!;4TU4]% Z2;Y=&!5(P 9@
M`C M22=7"8 <``,EP'DL\"!*=6P>L X@3B !T -(($Z!.C T(%!-"4PW5&])
M)U1!4%+M38!8!@`S,&,',1X0`C"3!) @@2!''V!U<$PX&'5B:D,Q22=;=WCY
M`)!G73M/19]&JD)4"[;W&"- )2#A;#(2'K 8]S2E_P9@/Z X4AG1!;%1,1F@
M.Y0?&E(>0P6P!($9,U0M,O@S." 5< 5 ,_ "(#*4NR4!/4)P"K%,T4YA;AQ@
MOT1@-T,=(CU",A$FL$)$8+P@0A^B+R!-@3DQ5"LP_33@*4X@+T(905[E&.$;
M4'\J4$1P,S @81[R'^%"4&[3%^ <0DY7!?!-+_ 6H=\:<!>P"7 UX#DQ3P$@
M#>!_'>TQ`BD19-,)<&1D*]M(_F\C`0.1&- B43%A&. #<*\=D EP!^ [7C\8
M&E,=T&T9$4))X1P`8Q^0&!1+X$(U4TI50"M#\W"/]W&?<HP8%$<<D0-0"> :
M@.<$D#/P1)%I>APA'. +< L#(!_A: ) <#HO+_UU4RY.8 6@,H E@6^-&!2^
M63"!7W$C$ AP7X5S4V#_!/(^D!PS5&,:0!?P'7 &T-$P$&QS0"6!<!N !)#_
M&1!W"% P-8%YMS.R'\$H\+T6H6MU11Q1*P`9`2U48X%'@#4W,#=-0$)0KQF@
```

```
M,H !D!'P+@6P9Q@:!1*Q`()0``,`$! ``````P`1$ `````#`( 0_____T `
M!S! D%".<.R_`4 `"# `=L\.<>R_`0L``( (( 8``````, ````````!&````
M``.%`````````P`"@ @@!@`````P ```````$8`````$(4````````#``6
M"" &`````# ````````1@````!2A0``MPT```,`"8 (( 8``````, `````
M``!&`````&%`````````'@`B@ @@!@`````P ```````$8`````5(4```$`
M```$`````."XP``L`)H (( 8``````, ```````!&``````Z%`````````P`G
M@ @@!@`````P ```````$8`````$84````````#`"F "" &``````# `````
M````1@`````8A0```````!X`.( (( 8``````, ```````!&`````#:%```!
M`````0`````````>`#F "" &``````# ````````1@`````WA0```0````$`
M````````'@`Z@ @@!@`````P ```````$8`````.(4````$````!````````
?`!X`/0`!````!0```%)%.B ``````P`--/TW```H!X4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

35. [wxsig] Circuit Cellar Ink Cover

```
From: William Beals <will@beals5.com>
Date: Wed, 12 Jul 2000 21:23:32 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96246-2000.07.12-22.25.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Folks:

I finally got two sample issues of the May Circuit Cellar Ink magazine that had our article. I can't remember anyone mentioning that we actually made the cover!!! That was a heck of a surprize! Sore jaw again.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

36. [wxsig] RE: radiation shield

```
From: Red <RedHaines@centurytel.net>
Date: Thu, 13 Jul 2000 08:39:27 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96330-2000.07.13-08.43.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Hello all you wx freaks:

In order to report temperature to the standards of wx reporting specialists, the temperature sensor must be shielded and mounted 1.5 meters above the ground. Both these parameters make large differences in the readings, especially when the wind is calm and the ground is either gaining or losing heat by radiation.

73 de Red

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] RE: radiation shield

```
From: Jack Warren <warren@mail-nh.eng.utr.ti.com>
Date: Thu, 13 Jul 2000 09:59:57 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96337-2000.07.13-09.04.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

> Hello all you wx freaks:
>
> In order to report temperature to the standards of wx reporting specialists,
> the temperature sensor must be shielded and mounted 1.5 meters above the
> ground. Both these parameters make large differences in the readings,
> especially when the wind is calm and the ground is either gaining or losing
> heat by radiation.
>
> 73 de Red
>
>

Hi all.

So you're saying that my Radio Shack Indoor/Outdoor thermometer will probably do a better job at indicating "standard" temperatures when the outdoor sensor is mounted on and extending from the window sill on the north side of the house than the WS1 mounted on a pole high atop the house?

Thanks,
Jack Warren

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] RE: radiation shield

From: David Norris <dave@webaugur.com>
Date: Thu, 13 Jul 2000 11:04:01 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96352-2000.07.13-11.08.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry if I'm windy ;-) The following would apply to what you might call "standard" measures. Such as reporting general weather conditions via APRS, WWW and such.

Jack Warren wrote:
> "standard" ... window sill

Window sill implies near a house which is a major radiation source. However, that sounds more desirable than way up in the air. I'd be much more concerned about extreme heat radiating off of the roof than leaking out the side of the house.

I yanked the IR heat sensors out of an old motion sensor to use for scouting instrument locations. It's fairly easy to throw together a simple heat detector with an old IR heat sensor and an analog meter. Good sense should go about as far albeit not as high tech ;-)

> mounted on a pole high atop the house?

Standard temp/humidity measures are taken about 1.5m (4-5 ft) above the ground clear (by a few feet or more) of unusual radiation sources such as large wooden fences, houses, pools of water, (the sun) etc. You want to be measuring the temp where people live (i.e. the ground), not way up in the air.

Here's a decent explanation of an instrument shelter (for those looking):
  http://www.nws.noaa.gov/er/rah/education/edu2.html

Here's a neat photo of a 1930s shelter:
 http://www.photolib.noaa.gov/lb_images/historic/nws/wea00903.htm

The size of those two shelters is because they contian manually read instruments ;-) Remote sensor shelters can be tiny. I use a short section of 4 inch diameter PVC drainage pipe (full of 1 inch holes) covered with reflective aluminum. It's not perfect in full, direct sunlight but it will keep the temp within 5 degrees or so. I keep it in a shaded part of the yard between the, detached & unheated, garage and privacy fence.

I've seen people taking wind measurements from wierd places, also. (The fellow with the temp/humidity sensor in the attic has his anemometer mounted under the eave of the house :-/) Wind measures should be taken at about 30 ft above ground in an area well clear of obstructions.

Almost no one can do that (i.e. NOAA can). If you have to mount it
above a house then it should be well clear of the roofline, 10-15 ft or
more depending on roof pitch, even if that means going above 30 ft.
Mine is at 20 ft because it's far enough away from the roof to minimize
vectoring (low pitched roof) and the extra 10 feet of mast make it
unstable without guys.

My rain gauge is mounted at the peak of the roof away from anything that
could deflect rain away or toward it. It's usually within a few
hundredths of an inch from the airport a few miles away and almost
always the same as the local TV station's weather gear a block away.

Does anyone have a URL for detailed NOAA/NWS instrument placement
guidelines? Book, URL, something... I've been poking around for months
trying to find something. I'd be willing to put it on the web if
nothing comparable exists. I have gotten great tidbits from asking
folks at various NWS offices around the country. I even have the
weather software accurately reading temperature in cricket chirps ;-)

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] RE: URL for sensor placement guidelines

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Thu, 13 Jul 2000 11:30:14 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96356-2000.07.13-11.35.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Does anyone have a URL for detailed NOAA/NWS instrument placement
> guidelines? Book, URL, something... I've been poking around
> for months
> trying to find something. I'd be willing to put it on the web if
> nothing comparable exists. I have gotten great tidbits from asking
> folks at various NWS offices around the country. I even have the
> weather software accurately reading temperature in cricket chirps ;-)

Federal Standard for Siting Meteorological Sensors at Airports
http://www.nws.noaa.gov/pub/ofcm/FCMS4.TXT

http://www.nws.noaa.gov/oso/oso1/oso12/fmh1/fmh1toc.htm

I'm sure that you will see that for most of us, it's rather impractical.
The standards were set up for Airports/Heliports, but all stations are
supposed to adhere to them. FMH1, chapter 2 mentions that, which is why I
included it.

Hope that helps.

Jack KE4LWT

40. [wxsig] RE: URL for sensor placement guidelines

From: David Norris <dave@webaugur.com>
Date: Thu, 13 Jul 2000 13:03:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96369-2000.07.13-13.08.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Smith, Jack R SGT 658 QM CO" wrote:
> I'm sure that you will see that for most of us, it's rather
> impractical.

The horizontal clearance is obviously going to be somewhat impractical
for home use. We don't all live on vast expanses of flat, open land.
Most of the other specs look within reason for home use, though. It
explains exactly how to obtain accurate measures even if impractical in
many cases.

> Hope that helps.

Immensely helpful. That is exactly what I've been looking for.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] RE: URL for sensor placement guidelines

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Thu, 13 Jul 2000 14:44:06 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96391-2000.07.13-14.49.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dave,

Now, just translate it all into HAM for the rest of us! Seriously though, a
much more condensed version would be nice, if you really want to work on
something like that.

Jack KE4LWT

> "Smith, Jack R SGT 658 QM CO" wrote:
> > I'm sure that you will see that for most of us, it's rather
> > impractical.
>
> The horizontal clearance is obviously going to be somewhat impractical
> for home use. We don't all live on vast expanses of flat, open land.
> Most of the other specs look within reason for home use, though. It
> explains exactly how to obtain accurate measures even if
> impractical in
> many cases.
>
> > Hope that helps.
>
> Immensely helpful. That is exactly what I've been looking for.

42. [wxsig] RE: radiation shield

From: Red <RedHaines@centurytel.net>
Date: Thu, 13 Jul 2000 14:52:13 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96394-2000.07.13-14.56.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello, Jack;

I'm saying the two sensors will record different values, both of which are accurate within the limits of
 the sensor. The air temperature changes with height above the ground, and the sensor will be hotter
than the air if it is exposed to sunlight and colder than the air if exposed to a
clear sky at night (that's the reason dew and frost form on objects at night, and sometimes frost forms
when the air temperature is above freezing).

A standard height and a radiation shield make comparisons of temperatures at different locations more
meaningful.

I built a radiation shield with 4 white aluminum ventilation louvers purchased at a building supply
outlet. I copied the concept used by NWS for their radiation shields.

Further explanation is that wind mixes the air so that temperature varies only a little in the first 50
or 100 feet above the ground. Without wind, the air at the surface heats rapidly as the ground is
warmed by sunshine and air at the surface cools rapidly as the ground cools by
radiation under a clear night sky, but still air is a good insulator and the air a few feet above ground
 changes temperature much slower.

73 de Red

Jack Warren wrote:

> > Hello all you wx freaks:
> >
> > In order to report temperature to the standards of wx reporting specialists,
> > the temperature sensor must be shielded and mounted 1.5 meters above the
> > ground. Both these parameters make large differences in the readings,

> > especially when the wind is calm and the ground is either gaining or losing
> > heat by radiation.
> >
> > 73 de Red
> >
> >
>
> Hi all.
>
> So you're saying that my Radio Shack Indoor/Outdoor thermometer will probably do a better job at indicating "standard" temperatures when the outdoor sensor is mounted on and extending from the window sill on the north side of the house than the WS1 mounted on a pole high atop the house?
>
> Thanks,
> Jack Warren
>
> ---
> You are currently subscribed to wxsig as: RedHaines@centurytel.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] Radiation shields

From: William Beals <will@beals5.com>
Date: Thu, 13 Jul 2000 20:09:08 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96445-2000.07.13-21.33.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

There is also a page on the website that contains similar information about
"ideal" sensor locations. The best we can hope to do is get as close to
those ideal conditions as possible.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] Ultimeter WX Data Decoding

From: Ian Wade <Ian.Wade@care4free.net>
Date: Fri, 14 Jul 2000 10:57:35 +0100
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96518-2000.07.14-05.02.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm adding Ultimeter WX decoding to <APRSdec>, but I have a few
questions:

Ultimeter II

  What are the "upper" and "lower" rain gauges?

  How does anyone reading the data know whether to divide the upper and
  lower rain gauge values by 10 or 100?

Ultimeter 2000 Packet Mode ($ULTW mode)

  What is the barometer delta value?

What is the barometer correction factor?

What is the algorithm for applying the correction?

Does field 12 contain "Rain Long Term" or "Today's Rain Total"?

73
Ian, G3NRW
Technical Editor, APRS Protocol Specification

--
+--+
| APRS on 144.800 [IO91SX]   ~55km/35 miles NNW of London |
| email: g3nrw@tapr.org |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.tapr.org/~g3nrw |
| Mic-Encoder Software: http://www.tapr.org/~g3nrw |
+--+

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] help with heathkit

From: shelden3@ionet.net
Date: Fri, 14 Jul 2000 07:59:26 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96529-2000.07.14-08.03.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,
I'm new to the sig so this may have been posted in the past.
I just bought (rather cheaply too), a heathkit #1590 anometer and wind
direction indicator. I was wondering if anyone knows if there is a 3rd party
interface board I can connect the sensors to so that the information to be
stored on my computer and possibly be able to send out to APRS? Thanks for any
help.
Charlie Shelden
KC5NBH
BridgeCreek, Ok

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] Sensors, website, and APRS docs

From: William Beals <will@beals5.com>
Date: Fri, 14 Jul 2000 07:06:49 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96541-2000.07.14-09.26.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Russ: That is a good-looking enclosure for being made of off-the-shelf
parts! Unless you would prefer otherwise, I'll add that to the updates I
intend for the website.

All: Quite a few updates should go up this weekend:
1) New Frames-based browsing to make my life easier (and hopefully yours
too!)
2) Add temperature shield docs
3) Add beginnings of Russes wind sensor
4) Fix some busted links

Ian: Our project (mostly) is based on the APRS spec rather than being its
own project that needs to have its protocols and such added to that spec.
 The only outside specs I've had to deal with is my Peet emulation mode. I
do have a big question though: I have been asking for some identifier that
is applicable to weather stations like ours, alas all that is currently
included is identifiers suchs as Windows, DOS, Mac, Linux, etc. There
wasn't any provision for embedded stations like ours. Bob said there would
be in the next rev. Is it?

will

```
------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

47. [wxsig] RE: help with heathkit

From: William Beals <will@beals5.com>
Date: Fri, 14 Jul 2000 08:29:39 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96542-2000.07.14-09.31.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Charlie:

Alas I don't know much about those sensors or the interface they use.

will

-----Original Message-----
From: shelden3@ionet.net [SMTP:shelden3@ionet.net]
Sent: Friday, July 14, 2000 6:59 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] help with heathkit

Hello,
I'm new to the sig so this may have been posted in the past.
I just bought (rather cheaply too), a heathkit #1590 anometer and wind
direction indicator. I was wondering if anyone knows if there is a 3rd party
interface board I can connect the sensors to so that the information to be
stored on my computer and possibly be able to send out to APRS? Thanks for any
help.
Charlie Shelden
KC5NBH
BridgeCreek, Ok

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(C@.`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M`````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`?````4D4Z(%MW>'-I
M9UT@:&5L<"!W:71H(&AE871H:VET`/(*`06 `P`.````T <'``X`" `=`"<`
M!0`]`0$@@ ,`#@```- '!P`.``@``'0`&``4`' $!"8 !`"$````V,4,X0CA!
M1C4R-3E$-#$Q03@U-C P,#!%.#E",T,P.0`-!P$#D 8`O 8``"$````+``(`
M`0````L`(P```````P`F```````+`"D```````,`+@```````P`V``````!
M`#D`P)2K\9_MOP$>`' ``0```!\```!213H@6W=X<VEG72!H96QP('=I=&@@
M:&5A=&AK:70```(!<0`!````%@````&_[9_QHZ^XR&)94A'4J%8``.B;/ D`
M`!X`'@P!````!0```%--5% `````'@`?# $````0````=VEL;$!B96%L<S4N
M8V]M``,`!A"ZM_@1`P``$*4"```>``@0`0```&4```!#2$%23$E%.D%,05-)
M1$].5$M.3U=-54-(04)/55142$]315-%3E-/4E-/4E1(14E.5$521D%#151(
M15E54T5724Q,+2TM+2U/4DE'24Y!3$U%4U-!1T4M+2TM+4923TTZ4TA%`````
M``(!"1 !````G0,``)D#```+!0``3%I&=2Z+?:8_```H!`P'W`J0#XP(`8VC!
M"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K
M"X!DVC0,8&,`4 L#8P!!"V! ;F<Q,#,S"Z8@ZD,/<6P(D#H*H@J$"H!&00M@
M!"!)(&0"("=1!4!K;F\'X&T5$&B.( &@"& %0'1H;P^@_B /H " !; $( 6Q
```

```
M&@`:0'4+@'0$D&8`T!I &Q%YM"!U#Z N%WH#\&P)4.<7B0KT%S S-@% %: !
M0"41,&\;<&-T$'0Q-M0@+2!"3P409PN !T##!= 'D'-A9V4@0Q=V#Q]4'R$+
M$Q]6:2TQ-,8T`4 7,#$X, % #-!Q(^-B($8#81=@#))B%0_0<QL@; $`;C-
M%FD"( ^P+B:Q(%M3D$U44#HF#W1=%W4?)1 &8 (P)7<E,&ED8<!Y+"!*=6P<
M("/@!RJ `= D<" V.C4Y)0_@32C'5&\E=U1!H%!2(%=8!@!P!9!?!S$8<!MB
M!Y %0$<#8'5B<"C(=6)J'X$E=UM$=W@`D&==(">A<.X@`_ :`#$181H`%+ ?
MH-\A_R,)'J0+MA>#2"8@"0#"+!=T22=M(":P!^#\=&\;`S#1&E VD@0`&4!3
M*F Q$&%V&D!B">$@]G :(!MP9!M!&P,*L"Z0.QQU&(!J'$ %0!FQ9VC9!4 H
M<C'A!) @#V QT*<+4!P@-H!O*2J 83&W^" C,2N@#] `< -P#[ _.U$`<#C@
M`_ ^$1=T9&G?"7 ?D":1&T$^\&,QX 6PZBX8<7<847<"( 2!"X#W-Q &D#UA
M>2:A&/,$($%![SLR&S$$(#Q@,PL@.6$`(/\<(!=T&U@&X L1&'$_T .@_06@
M;B:P'Y VI!IU-H$W,_<QX!L%`A!R`, _0S:!.$#?/H4ND 6P.-$_86T<( 6@
M_&UP&= ]U3B1`) "8!P@^TBA`:!L&]%&T0GP28$9TC,VD"U!4S\L< ]P;FO_
M!"!'T4%B/H4Q(AQU%O4&``,GI!=T2T,U3D)(K1=T0BHQ(7!#"=%K*H#L3VL7
M>B&W60A@&9!"H=YC"' )< (P*L%S+[ $\I\X0#C@-H$PLQF0<SHQ8&,&T#'0
M;'- 2@,/H'+].! N2@$7="R '# `@%2VSTP$/& "8$U1(&4`P ,1-S:!2[ X
M`2TPLR/0-3<P,#=-0!<P+I!S+NL!D!$P+@6P9QV."H 1\0(`7: ````#`! 0
M``````,`$1 ``````P" $/____] ``<P0+NJW9_MOP% ``@P0+NJW9_MOP$+
M``" "" &``````# ````````1@`````#A0`````````,``H (( 8``````, `
M``````!&`````!"%`````````P`%@ @@!@`````P ```````$8`````4H4`
M`+<-```#``F "" &``````# ````````1@`````!A0```````!X`(H (( 8`
M``````, ```````!&`````%2%```!````! ```#@N, `+`": "" &``````#
M````````1@`````.A0````````,`)X (( 8``````, ```````!&`````!&%
M`````````P`I@ @@!@`````P ```````$8`````&(4`````````>`#B "" &
M``````# ````````1@`````VA0```0````$`````````'@`Y@ @@!@``````
MP ```````$8`````-X4```$````!`````````!X`.H (( 8``````, ``````
M``!&`````#B%```!`````0`````````>`#T``0````4```!213H@``````,`
(#33]-P``&92%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

48. [wxsig] Re: radiation shield

```
From: "Carter Cogle" <ccogle@bellatlantic.net>
Date: Fri, 14 Jul 2000 12:47:13 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96560-2000.07.14-11.48.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Hi:
Sure would like to see your rad shield pix!
Thanks,
Carter
K4ARO

```
----- Original Message -----
From: "Russ Chadwick" <crb5@uswest.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, July 12, 2000 7:23 PM
Subject: [wxsig] Re: radiation shield


>
> >
> > How can I make a homebrew radiation shield?
> >
> > Steve Brennecke
> > KB5SJU
> >
>
> I've made four radiation shields to shield the temperature (and soon
> humidity) sensors from solar insolation.  If the Dallas 1-Wire wx station
is
> placed in the sun, it will have errors approaching 20 deg F.  This shield
> prevents thw sun from shining on the sensor and lets the cross wind carry
> away the heat due to the direct sun.  I've written up how to do this, but
> need to add the part about building the mount.
>
> I have three pictures of the shield and mounting.  It will mount on a
1"x1"
> or larger square tube.  I wouldn't mount it next to the anemometer because
> it could affect the wind being measured.  My pictures are all bigger than
> the 100 KB limit for e-mails to the wxsig.  So, if anyone would like the
> pictures, just send me an e-mail and I'll send the pictures back to you.
>
> Russ
```

> kb0tvj
>
>
>
>
>
>
> ---
> You are currently subscribed to wxsig as: ccogle@bellatlantic.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] Re: Ultimeter WX Data Decoding

From: David Norris <dave@webaugur.com>
Date: Fri, 14 Jul 2000 21:24:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96637-2000.07.14-21.29.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just as a note. Ultimeter raw data formats are miserable for APRS use.
So, don't expect them to make much sense in APRS terms ;-)

Ian Wade wrote:
> Ultimeter II
> ------------
>   What are the "upper" and "lower" rain gauges?

It's been a while. But, if I remember correctly... Upper is the long
term total and lower is the short term total. I think short term is
equivalent to since midnight. I never understood the terminology.

>   How does anyone reading the data know whether to divide the upper and
>   lower rain gauge values by 10 or 100?

I don't believe you can determine that. I think that would have to be
an option. Now, that being said, I'm guessing that the odds of finding
an Ultimeter II with a rain gauge capable of 100th are not very high.
Most mechanical gauges are only good to 10th. The expensive Peet Bros
Pro rain gauge is not mechanical and measures 1000th. (there is a decade
counter inside the gauge for some reason)

> Ultimeter 2000 Packet Mode ($ULTW mode)
> ---------------------------------------
>   What is the barometer delta value?

Change in last 3 hours. You would have to calculate the direction of
change based on the pressure 3 hours previous.

>   What is the barometer correction factor?

Instrument calibration. Ultimeters display Altimeter Pressure (as is
the standard covention these days) and are corrected to local altitude.
Those barometers that hang on the wall typically were marked to display
Station Pressure (maybe not these days). (For my location, an Altimeter
of 30 is a touch above 29 Station.)

>   What is the algorithm for applying the correction?

Probably only someone involved directly with the station would want to
apply a correction to the value given. It's there to correct for
miscalibrated sensors. I am not clear how to apply them but it should
be simple enough to determine. Basically, it's there so you don't have
to hike up a mountian to recalibrate.

This is a sample from a very new model Ultimeter 2000:
 $ULTW0000000002F80A8E2777000F9129000102C700C304DA00000000

$ULTW
 1 = 0000 = 5 minute peak Speed
 2 = 0000 = 5 minute Peak direction
 3 = 02F8 = Outdoor Temp
 4 = 0A8E = Long Term Rain (last reset or Jan 1)
 5 = 2777 = Barometer
 6 = 000F = 3 hour change
 7 = 9129 = LSW Correction

```
 8 = 0001 = MSW Correction
 9 = 02C7 = Outdoor Humidity
10 = 00C3 = Day of Year
11 = 04DA = Minute of Day
Optional
12 = 0000 = Today's Rain
Optional
13 = 0000 = 1 Minute Average Speed
CRLF

>   Does field 12 contain "Rain Long Term" or "Today's Rain Total"?

Depends on the age of the controller.  It could be either.  Field 12
and/or 13 may not even exist.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

50. [wxsig] Re: help with heathkit

```
From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Sat, 15 Jul 2000 09:20:20 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96696-2000.07.15-09.24.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
Steve Ciarcia did interface some of these instruments quite a while he was
still a Byte columnist.  You may wish to contact him directly, if he still
has back copies of article and work ....

http://www.circuitcellar.com/Bios.htm

steve.ciarcia@circuitcellar.com

gb

----- Original Message -----
From: <shelden3@ionet.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Friday, July 14, 2000 7:59 AM
Subject: [wxsig] help with heathkit


> Hello,
> I'm new to the sig so this may have been posted in the past.
> I just bought (rather cheaply too), a heathkit #1590 anometer and wind
> direction indicator. I was wondering if anyone knows if there is a 3rd
party
> interface board I can connect the sensors to so that the information to be
> stored on my computer and possibly be able to send out to APRS? Thanks for
any
> help.
> Charlie Shelden
> KC5NBH
> BridgeCreek, Ok
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

51. [wxsig] Website updates

```
From: William Beals <will@beals5.com>
Date: Sat, 15 Jul 2000 14:12:20 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96773-2000.07.15-16.19.39--lyris.wxsig#tapr.org@lists.tapr.org>
```

Rendered body type: text/plain

Folks:

Some highlights of the web page updates (not posted quite yet):

1) I removed the rework for the Beta boards. This would certainly prove
confusing for any of the new boards. If any of you still need that rework,
let me know.

2) I added the news of the Dallas weather station, hopefully as nicely as I
could. Text is:
(July 15, 2000) We fell victim to our own success sortof. Probably as a
result of our two articles, Dallas Semi got swapmed with orders for the
1-Wire weather station. So much so that they had to pull the product.
Weather stations have nothing to do with Dallas's core business, so we
completely understand their position and can't hold any hard feelings
against
them. Substitute plans are being formulated, but nothing official as of
yet.

3) Some docs on Russ's radiation shield is about to go up.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Second Temp device

From: Doug <dbuhrman@radiks.net>
Date: Sun, 16 Jul 2000 11:32:30 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96899-2000.07.16-11.37.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is there anything in the works to add a second temp device to the T238? As everyone knows the temp
device in the 1-w wx station isn't very accurate. I went ahead and built a T238 from scratch (I
just couldn't wait) and it worked first time up! I hope to have it on the air within the next 2
weeks. Thanks for you efforts on a great project!!!!

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] RE: Second Temp device

From: William Beals <will@beals5.com>
Date: Sun, 16 Jul 2000 12:22:48 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96907-2000.07.16-13.26.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

The latest release will find out there are two sensors and let you pick
which one you want to use as the outdoor sensor. The other sensor gets
ignored for now, I do not support indoor/outdoor or something like that.
 That feature was added specifically for the case you are talking about,
adding a second sensor that isn't inside the wind unit, but not requiring
you to remove it.

will

-----Original Message-----

From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Sunday, July 16, 2000 11:33 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Second Temp device

Is there anything in the works to add a second temp device to the T238? As everyone knows the temp
device in the 1-w wx station isn't very accurate. I went ahead and built a T238 from scratch (I
just couldn't wait) and it worked first time up! I hope to have it on the air within the next 2
weeks. Thanks for you efforts on a great project!!!!

Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(@T2`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`?````4D4Z(%MW>'-I
M9UT@4V5C;VYD(%1E;7 @9&5V:6-E`)T*`06 `P`.````T <'`! `# `6`# `
M``! `0$@@ ,`#@```- '!P`0``P`%0`(````%P$!"8 !`"$````U.#-#,#A#
M-#$R-4)$-#$Q03@U-C P,#!%.#E",T,P.0#Q!@$#D 8`3 <``"$````+``(`
M`0`````L`(P```````P`F```````+`"D```````,`+@```````P`V``````!
M`#D`H!M V%+OOP$>`' ``0```!\```!213H@6W=X<VEG72!396-O;F0@5&5M
M<"!D979I8V4```(!<0`!````%@````&_[U+8-L0(/%E;$A'4J%8``.B;/ D`
M`!X`'@P!````!0```%--5% `````'@`?# $````0````=VEL;$!B96%L<S4N
M8V]M``,`!A JZPC9`P`'$%@#```>``@0`0```&4```!$3U5'.E1(14Q!5$53
M5%)%3$5!4T5724Q,1DE.1$]55%1(15)%05)%5%=/4T5.4T]24T%.1$Q%5%E/
M55!)0TM72$E#2$].15E/55=!3E143U5314%35$A%3U541$]/4E-%3E-/````
M``(!"1 !````+P0``"L$``#L!0``3%I&=10$=T(_``H!`P'W`J0#XP(`8VC!
M"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K
M"X!DVC0,8&,`4 L#8P!!"V! ;F<Q,#,S"Z8@<D0(8&<Z"J(*A J 5.AH92 +
M8'0'D 5 "7"H;&5A#Z @`_!L`R#:9A3!( A@!4!T&! )<(8@"L 8('1W;R /
MH'\`@ 6P!" `<!FP&- %0'E!"& @<&EC:QD@:+4<0&@9P&X8(!OR=P!P>QGQ
M&M!U&0$8\!H"&<)D1F\%L1KT+B @& )O,QH2&N4@9P^P!"!I9SYN!; )@!EP
M!;$A('<L."!)(![ (;$%0'-UO'!P"1$@\!30'M$O'I8_'N(#< ^P') 6`!@P
M:6M[&I$/<'0?<QA0&7 8X'1G"' 9$1XA860!`!FP<YYP!9 &D!Q !T!L>2%S
M_QY2)X 9`1OR&G,'0!2Q),#_`: 9T2'P)K$I<QKA!: 9H<<@124R(/!S;B<C
M`@"0;P$``D,#\!FA=0,`*?%BQQGA(F()<'%U:040)+%O&_(=L0EP!&!V&" M
M8"Z?%TH9,A=*"O0DX#,V`4!?%: !0!$P'^ %D'00=#&H-B M,Y)/!1!G"X#G
M!T %T >0<V$@L#.3%T8/,J0R<0L3,J9I+3$TQC0!0"3@,3@P`4 ,T'$W,V(@
M1@-A%S ,DF(!%M0@6U--5% ZDF0MH&AR`X% <B:PR23P<RX<\'1=%T4X8!<&
M8 (P.,=3+4!D87GY(?!*=2>Q,V A\ '0-\!9/6 Q.A9 #^!-.T=4`F\XQU1!
M4%(@5^Y8!@`G(C1!20(P&C$8@8Y``V BL#M(=6)J,M&1.,=;=W@`D&==!E%5
M*M-4+T!P(B!E%'!C_F4U/S9*,?0+MA=3"N,*@.9)'C,:0FYY)(0+@"RD_P6P
M.M =HB:Q*H@88$1'':)!'E)4,C,X/Q^ 0=\$($2 !) ;\!SQ:R'!'C3/2S(7
M1$N%264Q+0?@0T#S&N !D'1I`B KU4T2&F"\8V,(<!A1'W$B$'<[X?\:8!@0
M)K ;8RV@`Q!244Q3/QEP`V$:X 4`&% <L2A)O1=$:AW@!4 %H#TP9"P"^QU@
M+6 I&V,M8$G#(5(N8$\8@5!0!X =T' A4>)H_F\G(!VB#W O<QS1'D,+<%\%
MP /P)((>0QSP> 5 ,N\P-0G@.M$E@VY*`2&"&_+_`1$)$00@4'$JD G!)<$R
MD1U"8B%>H1=*.5-+,$3<4U PW@J -0=9*,51<:\)< (P)[$BH&($\F(A47<=
ML4-#'A$Z&2 &T!C@;%QS0 6@1$ =X7(O<"[_91$7I1W!`(!C)AKB2H("8/]<
M,4SP`, #$1VQ&-$O<$_ `T-2-R U-S W34!?). 8@#K@`9 1,"X%L&<+%TH1
M\0!KL `#`! 0``````,`$1 ``````P" $/____] ``<P0 VSG%+OOP% ``@P
M0 VSG%+OOP$+``" "" &``````# ````````1@`````#A0````````,``H (
M( 8``````, ```````!&`````!"%`````````P`%@ @@!@`````P ``````
M`$8````4H4``+<-```#``F "" &``````# ````````1@`````!A0``````
M`!X`(H (( 8``````, ```````!&`````%2%```!````! ```#@N, `+`":
M"" &``````# ````````1@`````.A0````````,`)X (( 8``````, `````
M``!&`````!&%`````````P`I@ @@!@`````P ```````$8`````&(4`````
M```>`#B "" &``````# ````````1@`````VA0```0````$`````````'@`Y
M@ @@!@`````P ```````$8`````-X4```$````!`````````!X`.H (( 8`
M`````, ```````!&`````#B%```!`````0`````````>`#T``0```4```!2
```

```
113H@``````,`#33]-P``NL>%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

54. [wxsig] Another Question

From: Doug <dbuhrman@radiks.net>
Date: Sun, 16 Jul 2000 20:29:24 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96952-2000.07.16-21.34.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will:
Thanks for the quick response on the temp device. Now I have another question. What is the difference between the TNC dir mode and the TNC lpt mode? Surely it's more that the baud rate. I didn't see anything in the docs as it looked like they were written for an earlier version of the software. Thanks again

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] RE: Another Question

From: William Beals <will@beals5.com>
Date: Sun, 16 Jul 2000 22:46:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-96971-2000.07.16-23.50.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

LTP mode is for the KPC-3+'s that have a secondary port for GPS use. We found a way to make it work for weather use too. The difference other than baud rate is that the secondary port does not need to be initialized into conversation mode. Hopefully that is covered in the latest manual.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Sunday, July 16, 2000 8:29 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Another Question

Will:
Thanks for the quick response on the temp device. Now I have another question. What is the
difference between the TNC dir mode and the TNC lpt mode? Surely it's more that the baud rate. I
didn't see anything in the docs as it looked like they were written for an earlier version of the
software. Thanks again

Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(C$$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (```+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
```

```
M````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`=````4D4Z(%MW>'-I
M9UT@06YO=&AE<B!1=65S=&EO;@!$"@$%@ ,`#@```- '!P`0`!8`+@`6````
M2 $!(( #``X```#0!P<`$ `6`"@`.P```&<!`0F `0`A````.$1$-# P.34U
M135"1#0Q,4$X-38P,# P13@Y0C-#,#D`" <!`Y &`.@&```A````"P`"``$`
M```+`",`````````,`)@``````"P`I```````#`"X````````,`-@``````0 `Y
M`,!1#/6I[[\!'@!P``$````=````4D4Z(%MW>'-I9UT@06YO=&AE<B!1=65S
M=&EO;@`````"``7$``0```!8````!O^^I]0.5`-206UX1U*A6``#HFSP)```>
M`!X,`0````4```!33510`````!X`'PP!````$ ```'=I;&Q 8F5A;',U+F-O
M;0`#``800&?E00,`!Q#X`@``'@`($ $```!E````1$]51SI,5%!-3T1%25-&
M3U)42$5+4$,M,RM35$A!5$A!5D5!4T5#3TY$05)94$]25$9/4D=04U5315=%
M1D]53D1!5T%95$]-04M%25173U)+1D]25T5!5$A%4E53151/3U1(10`````"
M`0D0`0```,P#``#(`P``=P4``$Q:1G7-!0%S/P`*`0,!]P*D`^,"``&-HP0K
M<V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN
M9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF(')$"&!G.@JB"H0*@$RH5% @!&(@
M! `@`A )!<!T:!AP2U!#+=@S*R<$(!D`805 #W#R=AAP82 /H 6@%- *P)AY
M(' )$1BS1U %\,)U#Z N("!7&' "$"9U%- :87=A&Q!T;UD8,&%K&'$%0'<%
ML&OY&+-W91GP&1 %P!P!'4&J;QPQ5!D19 :09@20=0GP8QAP;Q[#&=$#H&+T
M874<T'(9\!AS&=,9`ND:G61O!Y%N(* CX G@6QS0'5%B&'$#`'0',6G^>B11
M"X =41JQ&D /D!GPCFD"(!@S'#%(;W !$/AU;&P=,1GB&)$%H"8A;R5S&/,+
M8"' <P5 `X%U_0= +A=*`_ GD!=*"O0E0/PS-@% %: !0!$P(* %D$)T$'0Q
M-B M+>)/?0409PN !T %T >0)E!G?F4MXQ=&+/0LP0L3+/9I,"TQ-#0!0"5
M,3B., % #- Q@V(@1@-A"Q<P#))B%M0@6U--@1@0.F1B=6AR`X%&0"&@'_!K
M<RXD,'2^71=%,K &8 (P,Q=3'+'Q'2 L($HG@!L0+; W4 ,!T#(0(#@Z,CD@
M)%!--9=4;S,75$&T4%(<4%@&`"=08P<Q7"!)`C @,2F!1P-@=6)P-9AU8FHM
M(3,76^1W> "09UT/X"/Q'M+^40I0*8 F@2^/,)HL1 NV]Q=3"N,*@%<J\1<U
M'[ `<,,U(!BW<75I8QXP.T&?&S `@""!*.0AP&UP'^!.911P(' <,4YO!^!)
M_QH5/@5$`#Z4'#(GY1D!%T0['_DDL'0>D GP&/-43GY#'^$%P!A#`' D84IU
M;/L%,01B/QQ -O )<">A'="_&:$$8 EP(A@A5QPQ24C6N&1N)P5 #Z!&TGD9
M`*\+@#/0*-4CH&,$(&$$(/L=T0D`;QV@'- E0!VA&0'W&Q >D$W!=P40`D!*
M,1C">P.1'J!R)4 >X28B)H)O^F9(F'-58$H`"L <(D,5#R\`"W(763.C2S!$
M4^Y0*RX*@"]760A@&F!-P=9C"' @070GH7,\@ 3R[R2P)&,]@U&A.AT`!M >
MH+AL<T %H$6 ' %R&D#^+EW!0K4=8!RP6\<:@1S#OP)@0S%44 # `Q$=46P>
MH T:0"T]@S%P-3<P-WQ-0"5 *8 U, &0$3 N+06P9Q=*$?$`9& #`! 0````
M``,`$1 ``````P" $/____] ``<PH H7-*GOOP% ``@PH H7-*GOOP$+``"
M"" &``````# ````````1@`````#A0````````,``H (( 8``````, ``````
M``!&`````!"%`````````P`%@ @@!@``````P ```````$8`````4H4``+<-
M```#``F "" &`````# ````````1@`````!A0```````!X`(H (( 8``````
M`, ```````!&`````%2%```!````! ```#@N, `+`": "" &``````# ````
M````1@`````.A0````````,`)X (( 8``````, ```````!&`````!&%`````
M`````P`I@ @@!@``````P ```````$8`````&(4````````>`#B "" &`````
M``# ````````1@`````VA0```0````$`````````'@`Y@ @@!@``````P ``
M`````$8`````-X4```$````!`````````!X`.H (( 8``````, ```````!&
M`````#B%```!`````0`````````>`#T``0```4```!213H@``````,`#33]
%-P``_:*%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

56. [wxsig] RE: Another Question

From: Guy Story <kc5goi@tapr.org>
Date: Mon, 17 Jul 2000 11:34:38 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97074-2000.07.17-11.39.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William, Jeff Brenton has a site that covers how to setup the KPC3 to
work as a wx station instead of an APRS tracker. The url is
http://www.theworks.com/~wa6ylb/kpcdigi.txt if you need to look it
over. It is my intention to use the wx station to do just this. I was
able to get a wx station before DS announced that they were out of them.

Guy

. On Sun, 16 Jul 2000, William Beals wrote:

> Date: Sun, 16 Jul 2000 22:46:22 -0600
> From: William Beals <will@beals5.com>
> Reply-To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Subject: [wxsig] RE: Another Question
>
> Doug:
>

> LTP mode is for the KPC-3+'s that have a secondary port for GPS use. We
> found a way to make it work for weather use too. The difference other than
> baud rate is that the secondary port does not need to be initialized into
> conversation mode. Hopefully that is covered in the latest manual.
>
> will
>
> -----Original Message-----
> From: Doug [SMTP:dbuhrman@radiks.net]
> Sent: Sunday, July 16, 2000 8:29 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Another Question
>
>
> Will:
> Thanks for the quick response on the temp device. Now I have another
> question. What is the
> difference between the TNC dir mode and the TNC lpt mode? Surely it's more
> that the baud rate. I
> didn't see anything in the docs as it looked like they were written for an
> earlier version of the
> software. Thanks again
>
> Doug K0DSP
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> begin 600 WINMAIL.DAT
> M>)\^(C$$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
> M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
> MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
> M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
> M="!'<F]U< !33510``=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
> M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
> M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
> M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
> M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
> M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
> M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
> M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
> M``,`_U\``````@'V#P$````$`````````F%D`02 `0`=````4D4Z(%MW>'-I
> M9UT@06YO=&AE<B!1=65S=&EO;@!$"@$%@ ,`#@```- '!P`0`!8`+@`6````
> M2 $!((#``X```#0!P<`$ `6`"@`.P```&<!`0F `0`A````.1-# P.34U
> M135"1#0Q,4$X-38P,# P13@Y0C-#,#D`" <!`Y &`.@&```A````"P`"```$`
> M```+`",````````,`)@``````"P`I```````#`"X````````,`-@``````0 `Y
> M`,!1#/6I[[\!'@!P``$````=````4D4Z(%MW>'-I9UT@06YO=&AE<B!1=65S
> M=&EO;@`````"`7$``0```!8````!O^^I]0.5`-206UX1U*A6``#HFSP)```>
> M`!X,`0````4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O
> M;0`#``800&?E00,`!Q#X`@```@`($ $```!E````1$]51SI,5%!-3T1%25-&
> M3U)42$5+4$,M,RM35$A!5$A!5D5!4T5#3TY$05)94$]25$9/4D=04U5315=%
> M1D]53D1!5T%95$]-04M%25173U)+1D]25T5!5$A%4E53151/3U1(10`````"
> M`0D0`0```,P#``#(`P``=P4``$Q:1G7-!0%S/P`*`0,!]P*D`^,"`&-HP0K
> M<V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN
> M9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF(')$"&!G.@JB"H0*@$RH5% @!&(@
> M! `@`A)!<!T:!AP2U!#+=@S*R<$(!D`805 #W#R=AAP82 /H 6@%- *P)AY
> M(')$1BS1U %\,)U#Z N("!7&' "$"9U%- :87=A&Q!T;UD8,&%K&'$%0'<%
> ML&OY&+-W91GP&1 %P!P!'4&J;QPQ5!D19 :09@20=0GP8QAP;Q[#&=$#H&+T
> M874<T'(9\!AS&=,9`ND:G61O!Y%N(* CX G@6QS0'5%B&'$#``0',6G^>B11
> M"X =41JQ&D /D!GPCFD"(!@S'#%(;W !$/AU;&P=,1GB&)$%H"8A;R5S&/,+
> M8"' <P5 `X%U_0= +A=*`_ GD!=*"O0E0/PS-@% %: !0!$P(* %D$)T$'0Q
> M-B M+>)/?0409PN !T %T >0)E!G?F4MXQ=&+/0LP0L3+/9I,"TQ-#0!0"5
> M,3B., % #- Q@V(@1@-A"Q<P#))B%M0@6U--@1@0.F1B=6AR`X%&0"&@'_!K
> M<RXD,'2^71=%,K &8 (P,Q=3'+'Q'2 L($HG@!L0+; W4 ,!T#(0(#@Z,CD@
> M)%!--9=4;S,75$&T4%(<4%@&`"=08P<Q7"!)`C @,2F!1P-@=6)P-9AU8FHM
> M(3,76^1W> "09UT/X"/Q'M+^40I0*8 F@2^/,)HL1 NV]Q=3"N,*@%<J\1<U
> M'[`<,,U(!BW<75I8QXP.T&?&S `@""!*.0AP&UP'^!.911P(' <,4YO!^!)
> M_QH5/@5$`#Z4'#(GY1D!%T0['_DDL'0>D GP&/-43GY#'^$%P!A#`' D84IU
> M;/L%,01B/QQ -O)<">A'="_&:$$8 EP(A@A5QPQ24C6N&1N)P5 #Z!&TGD9
> M`*\+@#/0*-4CH&,$(&$$(/L=T0D`;QV@'- E0!VA&0'W&Q >D$W!=P40`D!*
> M,1C">P.1'J!R)4 >X28B)H)O^F9(F'-58$H`"L <(D,5#R\`"W(763.C2S!$
> M4^Y0*RX*@"]760A@&F!-P=9C"' @070GH7,\@ 3R[R2P)&,]@U&A.AT`!M >
> MH+AL<T %H$6 ' %R&D#^+EW!0K4=8!RP6\<:@1S#OP)@0S%44 # `Q$=46P>
> MH T:0"T]@S%P-3<P-WQ-0"5 *8 U, &0$3 N+06P9Q=*$?$`9& #`! 0````
> M``,`$1 ``````P" $/____] ``<PH H7-*GOOP% ``@PH H7-*GOOP$+``"
> M"" &``````# ````````1@`````#A0````````,``H ((8``````, `````
> M``!&`````!"%`````````P`%@ @@!@``````P ```````$8`````4H4``+<-

```
> M```#``F "" &``````# ````````1@`````!A0````````!X`(H (( 8`````
> M`, ````````!&`````%2%```!````! ```#@N, `+`": "" &``````# ``````
> M````1@`````.A0`````````,`)X (( 8``````, ````````!&``````!&%`````
> M`````P`I@ @@!@``````P ````````$8`````&(4````````>`#B "" &`````
> M``# ````````1@`````VA0```0````$`````````'@`Y@ @@!@``````P ``
> M`````$8`````-X4```$````!`````````!X`.H (( 8``````, ````````!&
> M`````#B%```!`````0`````````>`#T``0````4```!213H@``````,`#33]
> %-P``_:*%
> `
> end
>
>
> ---
> You are currently subscribed to wxsig as: kc5goi@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
```

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] RE: Another Question

From: William Beals <will@beals5.com>
Date: Mon, 17 Jul 2000 20:30:09 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97123-2000.07.17-22.16.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Guy:

Thanks for the information. I do need to get my KPC3+'s upgraded so I can use that LTP command, but the idea of spending $70 for a firmware upgrade is tough to get over. I seem to remember paying only $100 for the whole box. I suspect if I was trying to be completely legal, I'd have to spend the $70 for each of my TNCs too.

Glad you got a station in time. Hopefully the news from Dallas won't be TOTALLY bad when it comes out.

will

-----Original Message-----
From: Guy Story [SMTP:kc5goi@tapr.org]
Sent: Monday, July 17, 2000 10:35 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Another Question

William, Jeff Brenton has a site that covers how to setup the KPC3 to work as a wx station instead of an APRS tracker. The url is http://www.theworks.com/~wa6ylb/kpcdigi.txt if you need to look it over. It is my intention to use the wx station to do just this. I was able to get a wx station before DS announced that they were out of them.

Guy

. On Sun, 16 Jul 2000, William Beals wrote:

> Date: Sun, 16 Jul 2000 22:46:22 -0600
> From: William Beals <will@beals5.com>
> Reply-To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Subject: [wxsig] RE: Another Question
>
> Doug:
>
> LTP mode is for the KPC-3+'s that have a secondary port for GPS use. We
> found a way to make it work for weather use too. The difference other
than

> baud rate is that the secondary port does not need to be initialized into
> conversation mode. Hopefully that is covered in the latest manual.
>
> will
>
> -----Original Message-----
> From: Doug [SMTP:dbuhrman@radiks.net]
> Sent: Sunday, July 16, 2000 8:29 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Another Question
>
>
> Will:
> Thanks for the quick response on the temp device. Now I have another
> question. What is the
> difference between the TNC dir mode and the TNC lpt mode? Surely it's
more
> that the baud rate. I
> didn't see anything in the docs as it looked like they were written for
an
> earlier version of the
> software. Thanks again
>
> Doug K0DSP
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> begin 600 WINMAIL.DAT
> M>)\^(C$$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
> M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
> MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
> M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
> M="!'<F]U< !33510``=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
> M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
> M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
> M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
> M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$`````?````
> M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
> M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
> M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
> M``,`_U\``````@'V#P$````$`````````F%D`02 `0`=````4D4Z(%MW>'-I
> M9UT@06YO=&AE<B!1=65S=&EO;@!$"@$%@ ,`#@```- '!P`0`!8`+@`6````
> M2 $!((#``X```#0!P<`$ `6`"@`.P```&<!`0F `0`A````.1-# P.34U
> M135"1#0Q,4$X-38P,# P13@Y0C-#,#D`" <!`Y &`.@&```A````"P"```$`
> M```+`",```````,`)@``````"P`I``````#`"X```````,`-@``````0 `Y
> M`,!1#/6I[[\!'@!P``$````=````4D4Z(%MW>'-I9UT@06YO=&AE<B!1=65S
> M=&EO;@`````"`7$``0```!8````!O^^I]0.5`-206UX1U*A6``#HFSP)```>
> M`!X,`0````4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O
> M;0`#``800&?E00,`!Q#X`@```@`($ $```!E````1$]51SI,5%!-3T1%25-&
> M3U)42$5+4$,M,RM35$A!5$A!5D5!4T5#3TY$05)94$]25$9/4D=04U5315=%
> M1D]53D1!5T%95$]-04M%25173U)+1D]25T5!5$A%4E53151/3U1(10`````"
> M`0D0`0```,P#``#(`P``=P4``$Q:1G7-!0%S/P`*`0,!]P*D`^,"`&-HP0K
> M<V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN
> M9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF(')$"&!G.@JB"H0*@$RH5% @!&(@
> M! `@`A)!<!T:!AP2U!#+=@S*R<$(!D`805 #W#R=AAP82 /H 6@%- *P)AY
> M(')$1BS1U %\,)U#Z N("!7&' "$"9U%- :87=A&Q!T;UD8,&%K&'$%0'<%
> ML&OY&+-W91GP&1 %P!P!'4&J;QPQ5!D19 :09@20=0GP8QAP;Q[#&=$#H&+T
> M874<T'(9\!AS&=,9`ND:G61O!Y%N(* CX G@6QS0'5%B&'$#``0',6G^>B11
> M"X =41JQ&D /D!GPCFD"(!@S'#%(;W !$/AU;&P=,1GB&)$%H"8A;R5S&/,+
> M8"' <P5 `X%U_0= +A=*`_ GD!=*"O0E0/PS-@% %: !0!$P(* %D$)T$'0Q
> M-B M+>)/?0409PN !T %T >0)E!G?F4MXQ=&+/0LP0L3+/9I,"TQ-#0!0"5
> M,3B., % #- Q@V(@1@-A"Q<P#))B%M0@6U--@1@0.F1B=6AR`X%&0"&@'_!K
> M<RXD,'2^71=%,K &8 (P,Q=3'+'Q'2 L($HG@!L0+; W4 ,!T#(0(#@Z,CD@
> M)%!--9=4;S,75$&T4%(<4%@&`"=08P<Q7"!)`C @,2F!1P-@=6)P-9AU8FHM
> M(3,76^1W> "09UT/X"/Q'M+^40I0*8 F@2^/,)HL1 NV]Q=3"N,*@%<J\1<U
> M'[`<,,U(!BW<75I8QXP.T&?&S `@""!*.0AP&UP'^!.911P(' <,4YO!^!)
> M_QH5/@5$`#Z4'#(GY1D!%T0['_DDL'0>D GP&/-43GY#'^$%P!A#`' D84IU
> M;/L%,01B/QQ -O)<">A'="_&:$$8 EP(A@A5QPQ24C6N&1N)P5 #Z!&TGD9
> M`*\+@#/0*-4CH&,$(&$$(/L=T0D`;QV@'- E0!VA&0'W&Q >D$W!=P40`D!*
> M,1C">P.1'J!R)4 >X28B)H)O^F9(F'-58$H`"L <(D,5#R\`"W(763.C2S!$
> M4^Y0*RX*@"]760A@&F!-P=9C"' @070GH7,\@ 3R[R2P)&,]@U&A.AT`!M >
> MH+AL<T %H$6 ' %R&D#^+EW!0K4=8!RP6\<:@1S#OP)@0S%44 # `Q$=46P>
> MH T:0"T]@S%P-3<P-WQ-0"5 *8 U, &0$3 N+06P9Q=*$?$`9& #`! 0````
> M``,`$1 ``````P" $/____] ``<PH H7-*GOOP% ``@PH H7-*GOOP$+``"
> M"" &``````# ````````1@`````#A0````````,``H ((8``````, `````
> M``!&`````!"%`````````P`%@ @@!@``````P ```````$8`````4H4``+<-

```
> M```#``F "" &``````# ````````1@`````!A0```````!X`(H (( 8`````
> M`, ```````!&````%2%```!````! ```#@N, `+`": "" &``````# ````
> M````1@`````.A0````````,`)X (( 8``````, ```````!&`````!&%`````
> M`````P`I@ @@!@``````P ```````$8`````&(4````````>`#B "" &`````
> M``# ````````1@`````VA0```0````$`````````'@`Y@ @@!@``````P ``
> M`````$8`````-X4```$````!`````````!X`.H (( 8``````, ```````!&
> M`````#B%```!`````0`````````>`#T``0````4```!213H@``````,`#33]
> %-P``_:*%
> `
> end
>
>
> ---
> You are currently subscribed to wxsig as: kc5goi@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
```

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(@\#`0:0" `$`````````!``$``0>0!@`(````Y 0````````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`A````4D4Z(%MW>'-I
M9UT@4D4Z($%N;W1H97(@475E<W1I;VX`-0L!!8 #``X```#0!P<`$0`4`!X`
M"0`!`"L!`2" `P`.````T <''!$`% `;`#$``0!0`0$)@ $`(0```#-$-$0W
M0T5$,3(U0T0T,3%!.#4V,# P,$4X.4(S0S Y`"(''0.0!@#$%0``(0````L`
M`@`!````"P`C```````#`"8``````L`*0```````P`N```````#`#8`````
M`$ `.0"@0Z(78/"_`1X`< `!````(0```%)%.B!;=WAS:6==(%)%.B!!;F]T
M:&5R(%%U97-T:6]N`````(!<0`!````%@````&_\& 7HNU\33Y<$A'4J%8`
M`.B;/ D``!X`'@P!````!0```%--5% `````'@`?# $````0````=VEL;$!B
M96%L<S4N8V]M``,`!A#IED+"`P`'$$L0```>``@0`0```&4```!'55DZ5$A!
M3DM31D]25$A%24Y&3U)-051)3TY)1$].145$5$]'151-64M00S,K4U501U)!
M1$5$4T])0T%.55-%5$A!5$Q44$-/34U!3D0L0E545$A%241%04]&4U!%3D1)
M3D<D``````(!"1 !````HQ(``)\2``!I' ``3%I&=4Z2_(T_``H!`P'W`J0#
MXP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *
M@78(D'=K"X!DVC0,8&,`4 L#8P!!"V! ;F<Q,#,S"Z8@<$=U>3H*H@J$"H!4
M.0]P;FL$( (0!<!T:)QE( N &&$`P'1I`B `+B @22!D;R!:;@G@9!B0&?!G
M#[ @`&UY($M00S,KTB<$('5P"<!A`0`:0-9S&? 9P&,#D74/H!B1X1E ($Q4
M4!Q0`W #@>!D+"!B=05 &*,!`%!A(&]F' !P"?!DX0N 9R D-P_0&&(>L/1F
M:1D@=PK &, ;A1C0(P0@&F!U9V@:5F]VYP20&9,/H&5M&E()< > :P;0!) @
M"K!Y'U("(&R=&N D%B ?M!BB=V@&\+L8P ;@>"*$'* ?$&,%0.\&D!FQ(' A
M47(D`QIA(Z"W'6(+4 ^P921Q):!G!T#Y'>!))QI #W B4!I2'P,_&),?EAZ@
M#V >PAK15$[20R%2;RX7.D<+8!I MGD(8!J ;P5 'K!S`9"?&5(8T1B0!W$9
MD4AO'Q"X9G5L)'$8HAH0=QA!N0-A($0'0 M@!"!W`B &)P5 * %43U1!3/Q,
M61WP+5$E< GP&- %0/<=<0>1"&!T+&L#\"^@%SKA"O1L:3,V`4 5H % #Q$P
M+= FD1!T,38@+?4W8D\%$&<+@ = != 'D/QS81J0-V,7-C9T-D$+$\$V=FDM
M,30T`4 UP!PQ."3 #,$[`V(@1O<#81<@#))B%M,&`!I@)W 0(%M331U .FMC
MLC4MP&E `9 1,"X%L'QG71<U/# &8 (P/)=-;0(@9"/P'>!*+Y :X#$>-QW@
M`= DP18@.C,U90_@33\G5&\\ES'@4/!2(%=8!@`F@0<Q&;#O`C $D >0!4!'
M`V ;@#\H&'5B:B:1/)=;=WBG`) _``?P13H/X&XMT/L8L 7 40I0+B 983D/
M.AK?-<0+MA=#"N,*@%<T<0<PYFU X0$1($()< (P+G'_#W $("X!,M <Q06@
M(E$$(/\E@ ?@*>(/L!N &),;`AI1^S0%!;!K( !-PD<@+ADN(/\>H!I 'M$#
MD4.Q!? G8 #0[FLB8Q?P(*%R`R $`!<T@F@"0' Z+R]W58 F+ABA4/)S+AUQ
M+WX!(' V>6QB+VMP[F,?0#?@5;!X)K,M@AH6_0D`;U$@,M 7-")&)K$$(/\:
MT0N *) ","YB&F$<I"51]U&H&F$9X6H<H!XB! `9D_\G(1<T`: EH1IE47LC
MH!AA'1C 1 7P``!'X'5N8^\:,ASR&*$:X'=$T3-2'L*]&*%M+&P7`!<Z&9%/
M`Z#]1A!N'> W,4$!08,=X$Q%NTT0'J!L,1$V<A<K/C"Q!V<A9.]!@#(Z-#8Z
```

```
M^VF@-U P-?!+96@0/%-F#5H\-&) (Z!FL3560C[)9[9290M0>2U"\4.?]T2L
M;#%',D UP"X@5C ^EO]M1VX_;T]P7W%L1A9'#T@?_V@!9[<A@1<E>0@=,@1B
M(3+[&&8;`2T;,QSC*9,N`061FT"A/9%P"1$84T=0!?#['*$9D5<8P&>V`A!@
MT!I _U%Q(_ :4@# 4[ RPE#S&&+_8= 90'?B'*,L05/T'T !(/]$T6#A'L!W
MTQSA`Z%GQ3) _G4:0!NP3B$A0F%%?7X9X'\'D7>Q&@<H`0N ,M ',6G^>AHQ
M6I$9\&>V?:%.PBY$_P1B+QT=`2%!3J.)8QB3"V#W*)!%`0.!=0= +&5Y"#1H
M?WD(-V\X?6KE#()YDSVU9*4>`&@9(6Y &[%I5B%]&A!T/Q5V,3_&:() N3;%
M074X:? Y(%!"57(C_Y-#<H]$OW8:DT-VYG>O>+V/9[9,0GGG%_UQ=6E3H/\C
M01\``B <L5L"&+$HD"A0W1G0911P8/ 9D4Y/(1G _WT4G35GMJ%@2'1_(HQ5
M&*'W9[:#:2.@=&'0,J$8HBOAWX-1!<![,QVQJ%=L!3$$8OX_&:!&$ EP)'$R
MT!M1!&"_()%GMH87A4<9DJ:X9#%2>R+14N%Y74$?88U%&>!C_TW!!" RT5C"
M&C$UP($188C_9O RT%JQ'\2$J!Z@5& (D?X@3L(N8F)D9[8<$ & ('(_4^,8
M$SB "W)XOY.Q2S#=8&!0GB^0:&>V62V1((+>8PAP33(D<2908@3R(Z!O&D-V
M\U$Q=X!W(Y%FL4#[*#(<H7(B4%9"<<@;< " _[O6(L& ,P)@&!$K( # `Q&W
M6)(>H")0+7;S.O U'Z"\-TUTW;;>(Z"142!J40&9L$E.34%)3"X(1$%49[9-
M/BE<@%Q>*$,D)&!!\+ P(B!@QN#'="''< ''83 ^,"% 8"A+QW(R(##'=2-(
MQ_$H:D!L,&#%UR;'0,?Q10$6,#)9+3HV+5*$.U>1$#E',$ UX$ E23LB62[+
MP#&.1<F R=#&\%8@(<= OB+'<\B S;'&T,771)?PO&!5'X#*XL=RR110QW!;
M'>#(HRO'<,: +L=T*/0A7[A@7,?AQW [(,=T`\77QW B(2I17D0`3THL,"8Y
M54YB8&X@(2-5QR#'<R40,2$T)<G@-55 `$ T5R%%.%9%0D',@"$I.T?,X#RH
M1C53Q=<]TZ GUP!8754\S7 60#46(& P)SU8/-90S! F421)/,S04RO6T$$\
M2"<H3LO *4?'E%BOQW"HP-(CQ=<AR1(ED-"L-27*TL=P)\B (QW@A<=C-<=R
M/5=!4\N `CT2P"9%4STG+ !./28E4#Q"64Y/UP#*&= 5-2/=="/P8"]8+\AQ
MVL104-(C$BC)$B(].R U(3(0*"4]..-P+5 Y`\N0K<=-.#900#) -EE4.3<I
MUO!7Q<P@,=I@3STW%N#19K8B!?#2(R;APMQT6M7 VD'+0#3>@,77,\L00A""
M)=\`-20E,#3?<'@O-$3*$.$SR-''=$P/QO#)D-(CW2 C5C=0C<=C/]*[Z90A
M-S;3H" S/"8U0\N )4SF*,L0WQ$U4N5 ;B#NH)H]R[$UT&'-H3\][( /W#/'
M9-_KY/!,/TDK0EK&P"%&/3OKX#WYQO!=-,X!Q[+C+^3*Q=<SY8G28%15.Q#-
M<%<^2B?D$#G4H$PZ[S$\@E+E(#@W(5(KV" W[Q#OTN%#5?!3TODL8 Q?5<:
MQW1 )U8CQ^PDQV;'<$8E1,;P$6!'S_'RX-)"1#1:XW!-Y_<SQ=?44%1 :D#?
M@-\@QD'6\.VP,3TVUR#?((1%3_*P(20B0.F@"\GP^G CX<(M("<AJ]!@R1 A
MSS KR( VTKOC$6#R<"@H(.J!VO')@#_(8-]0QU#'0 (@`'!@+DGOTB8\Q^ P
M1OS2027'<BXDH"0MX/!0+BPS-/J@Q>8Q0A B,4$#X%$L-"18?& XC% L!E$'
M4$!9,'Q0O=U0(_R0QS %(3(@)@2P[D )P,=P!;,BT&#.,M_;W=$`(OIPQW3Z
M<"GS0PISWDG))LV@`Z(,1"T,M4' "\C@TOQL_Y C+S9)_%M;T@'=( %QQU3]
M'_Z_S__!UT@``PS48#?($L>R`\\PQ[)/7EY)73 *+MW0+4M0-E58,5A5*D$"
M(<F01KA0*?_'<6U'TW#:X/IPR1/S(,?!X]B$VJ4G4%#2(P1!W0%^/<QPV6"7
M\-<0UG#>\%5W^("1$,77.\D0ZH$[@2;./\L@9>#'T%$CVO#AP;_=(>Z@SV/6
M(,=R!B!=V* H4TDLW* A?&!4,2 E,C4M)NB(52D@-#(D-2L'X"Q-3"Q2Z0#I
MD$$A(D-$3^- ]L#@X" P623C,"E*.0?@72!P)#GJ`3V1[9!5-3/",#TE!L@2
M1!^0,T358#54)<HYZ9!=:C T32!A05 ](4$K)9$@<",0(G(E-))%)*(Q+R%
M,2@9Q9XBTOBX,,D0R1(L4.J!)B/(H-!A/5 90211&#HQ1^\PW" E4R^-T& J
MQO 0`%U0*OR0!%XLS; F+4A0,+Y+Z'C9$"80+0`!4"0LL!<#X!J ZU!.^, \
M1R0@4B->.5TNL$H@3POPU> $P `0+$,&H#*#++ P($@E5B(I]R H.E!.Z'@Y
M+4!4(Z@F(4/50"#1`%88T48PPH#4,%E'+%!04\$J<$Y&*"<I`& RT))'">!*
M0C$P,"H`@.Q22-RA`$ FR>#;F,V0&<B 02 Q@ 4@5#HA"9F ,E74L"L]0%/H
M*E(\R= A_) [@$(@0"-7(U(]09F ."D#`"](Q-! W' @*CT7L$$/6#2 -S &
M$})3!1<`("3P7"PI52-*6J.0*-.@-R8[,"+W`&#44#H1.OA .5#98#=PH#M5
M1#@LWS!+/+ 'Z:'8`"3X3"9/6280*RU7.2N@4"8Q!SO &H :@"<T)DH[>%%0
M4?/ )>"8,,<0.<WD\# D8'ZP.%$WL$$`\ELRP#TDR9 _P,7(^$#H-#Q4VB Y
MT@'>0$+ `"PY8$Y$.D<V8#%/(5DE/& Q$$/!F=!'0#914SZPW* 60CYQX6 G
M/K L-D=@7CY",3'%UPWP("'C$#%*42;/$"]$8S3@4#!&1"+1P#@P)PXCU9#+
MP,UP)"]!53W>H%!$L"N@1I TH"5(%"(XUG!2UR F+RS**^0X(CLP/% X\ .0
MF"557T'P,R!!/2Q0CE]^H$CP3: B3S#+(.TL(%,.H-RP)7> W" `4(901:'\
M@"0I5"1&\%)1Q=<M0M-@*\9@+_X_[9!!L#'!-W [P%'@R%"3Y6 TX#]&)J!8
M4=\@4"LO,$PM8$Q\<"_B.1_0(E11!D#(8,<@9SCPQ=<T`$(NEP#<L",1`4!1
M0%;)X#% +0A!(E%,P",I*4*__;#,(!;0D-!6$19@1CMP:?^P05)-`2;'(.=
M)PA?(4OU>%)81"QP)S)>-_^@Z6 M@"9..-"@"$!2X#,G?(!1-UG >N#NH$A&
M`/>@,"N^.\40]P`0`#*PXK H`/ J6C"P1#8X*2 !+3F5XQ [-# WZ9 F5-6!
M+CS5@ GQXP`P"# \488WUI';$4 L,D;_D-90#J#_L"E@D#E*4!N@EDB89SL0
M,UY@-E[EP)UH$")!L!*0X8 B+UL@M5$`7M)P235@6G!&Y/ B7DO *4A,0%!.
M5B)=6L$B3BPU<"4\DDK&@#$\!K@G6\V0C#PL' #1P$)7/%YPJ?2@45@&<%0=
M@"9^T"7.`"+3H2XP-[ F5>!0)UXA+D `8( [(75FL#3?@"%I`,9PQ>9?NE$U
ML"_5L,;@/# T2; H*$=9)9 A4@`P6]%8H$1$3$;P/L\00"'0+RTT,VNP(VCP
MZ:"-&H!!1M&WP#@T20:XZ#LO3.E@,#MP8S ;@$.1$#<P/"(^0=C@(EA?)CK&
MT%IP14]P01A 035!$>A 0S9.K4! 3F#@./%:-@!43?#[1$#3!RK&@ 'P$# U
M8&T@JD-#`"S)T";&T"AO(.X];!#\D$$`5OLP`4#+(&PA5CV@/K!7&W%LL"0_
MUA K(<D02/!S<%2G,4/C<" &<#$G2OA@(6!2(#!8,CA"9&#EX%Y&R#DH1O=0
M-3A;@,V@6DP)8"A9H.#@4OJQ(@17*.W0,RY#,E.S`%#%US1>", X4%@U<'PB
M7>W0:) )\&!@X] ]'CEWX#LP$K#"4$=(-X8LQH#)\#-26U(P\*(I=$!=0%7_
M0"[%L*W'T$U2(,772$V 3$0`L3O 2"0V`5 [P%)(L+DOL"M%UA M<.A0./A@
M)% VQH \.N6P4R-V3Q>P$K!3* #W`.#P8'I1[W TY-!_Z;8`QQ%4WW\@@V!@
MD.X08)!75 !44BUCT567`%A0).) 3BM'%L#CX%+@*B0_QN Y_\K X6#-@,D3
M^<L&$-S$T%#[QS!*,%^*49T`QW!,P#G087X@+2I'3X,0W+) _8KI)-$!QS!'
MJ,<P"@+)8F>)E1]1#+0C0<D6^F%@?SG0`T$5L]!RTJXV`,>4(OXE^^?08 "A
MU>#AL] RCC:3<,#'<S1(&4$K/+H7_^!BZH$%8(V/CI@WH,D6VN'^*) 9#VF.
M-I'U(&"2@M(C^\V!R7% 92#-D O1O2"6KN_?ZX[%?W"/62E(0) _D=CWWS"=
M_]!129-?E&DV$!E"_<=S/LF 4."6IM+YET]UT._)$LD3^]C=(5FCGM_LE*6\
M+5@90L=CTB/:EBZ0'_^:U-_LIB";I\_UI<5_D!CINC('4$@,M0#1V(!=N7;C
```

```
MX\''<%\Z*B3WRB? (1^X?[F/NI^[K[RW:V,U\&=O:4###K\OP#_!3W_"7\-O
MMP6W%"<`?D#!R4=*=;E 4[YP<GFW%$L\0S6+4.0ENN^W,FAT0'1P.B\O=\;0
M+N'%%"YN973!NL&ZMY<GN$^Y7[IF=VV]$&%L@'- 8V]M<'6]0/IROM NS.&W
M%+Q?O6^^?U>_C\"6MQ1]MU `TX ``P`0$ `````#`!$0``````,`@!#_____
M0 `',*#)8,1?\+\!0 `(,*#)8,1?\+\!"P``@ @@!@`````P ```````$8`
M`````X4```````#``* "" &`````# ````````1@`````0A0````````,`
M!8 (( 8``````, ```````!&`````%*%``"W#0```P`)@ @@!@``````P ``
M`````$8``````84```````>`"* "" &`````# ````````1@````!4A0``
M`0````0````X+C `"P`F@ @@!@``````P ```````$8`````#H4````````#
M`"> "" &`````# ````````1@`````1A0````````,`*8 (( 8``````, `
M``````!&`````!B%````````'@`X@ @@!@``````P ```````$8`````-H4`
M``$````!`````````!X`.8 (( 8``````, ```````!&`````#>%```!````
M`0`````````>`#J "" &`````# ````````1@`````XA0```0````$`````
A`````'@`]``$````%````4D4Z( `````#``TT_3<``//7
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

58. [wxsig] Re: Ultimeter WX Data Decoding

From: Brian Short <k7on@earthlink.net>
Date: Tue, 18 Jul 2000 04:01:44 +0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97173-2000.07.18-10.01.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is there a source for the entire format of the Peet Brothers U-100?

I'm sorry if this is repeated question, but I don't have the information
and have not found it very efficiently as yet.

TIA, Brian

At 09:57 AM 7/14/00, Ian Wade wrote:
>I'm adding Ultimeter WX decoding to <APRSdec>, but I have a few
>questions:
>
>Ultimeter II
>------------
>   What are the "upper" and "lower" rain gauges?
>
>   How does anyone reading the data know whether to divide the upper and
>   lower rain gauge values by 10 or 100?
>
>
>Ultimeter 2000 Packet Mode ($ULTW mode)
>---------------------------------------
>   What is the barometer delta value?
>
>   What is the barometer correction factor?
>
>   What is the algorithm for applying the correction?
>
>   Does field 12 contain "Rain Long Term" or "Today's Rain Total"?

--
Seek those who find your road agreeable, your personality and mind
stimulating, your philosophy acceptable, and your experience helpful.
Let those who do not, seek their own kind. -Henri Fabre
--
mailto:k7on@earthlink.net
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

59. [wxsig] Re: Ultimeter WX Data Decoding

From: David Norris <dave@webaugur.com>
Date: Tue, 18 Jul 2000 10:52:06 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97189-2000.07.18-10.57.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian Short wrote:
> Is there a source for the entire format of the Peet Brothers U-100?

Is it different than other stations? The web site says that the format
is the same for the 2000, 800, 500, and 100 models. Here are the
published serial specs (II and others):
http://www.peetbros.com/faqs.htm#Q6

If this is not correct then you might try emailing
(jstewart@monmouth.com) or calling Peet Bros (1-800-USA-PEET). They are
normally very good about helping with technical information.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] Rain Gauge Fixed!

From: "Debbie Beckwith" <beckwd@earthlink.net>
Date: Wed, 19 Jul 2000 13:09:16 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97205-2000.07.18-13.16.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You can imagine my dissapointment when within a month of being installed, my
rain gauge promptly quit! Confident in my wiring and installation, I was
sure I had a bad unit. When I finally checked the unit I found the "tipper"
had been securely fastened to its frame by a spider web! A little hosing
out, and my rain gauge is back on line.

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] ARRL and TAPR 19th Annual Digital Communications Conference

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Tue, 18 Jul 2000 19:21:10 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97253-2000.07.18-18.26.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

ARRL and TAPR 19th Annual
Digital Communications Conference
September 22-24, 2000 - Orlando, Florida

For more information see: http://www.tapr.org/dcc

Information
Mark your calendar and start making plans to attend the year's premier
event in digital communications. The 19th Annual ARRL and TAPR
Digital Communications Conference will be held September 22-24, 2000,
in Orlando, Florida - just minutes from the Orlando International
Airport.

The ARRL and TAPR Digital Communications Conference is an
international forum for radio amateurs in digital communications,
networking, and related technologies to meet, publish their work, and
present new ideas and techniques for discussion. Presenters and
attendees will have the opportunity to exchange ideas and learn about
recent hardware and software advances, theories, experimental results,
and practical applications. The Digital Communications Conference is
not just for the digital expert, but also for digitally oriented
amateurs of all levels of experience.

A Conference for the Beginner as well
The conference is not just for the digital expert. As in years past
an entire session strand with beginning, intermediate, and advanced
presentations on selected topics in digital communications will be
offered. Some of the topics will include: APRS, Satellite
Communications, TCP/IP, Digital Radio, Spread Spectrum and other

introductory topics. Come to the conference and hear these topics presented by the experts!

Area Attractions
The Orlando Florida area is famous for its attractions and vacation spots. Disney World, Universal Studios, and Sea World (just to name a few) are within 15 minutes of the hotel. Shuttle service from the hotel will be available for a small fee. Cape Canaveral and Cocoa Beach are a 30 minute drive East of the hotel.

Symposia, Seminars and Banquet
Two symposia/seminars will be held which allow those with additional time and interest to make the most of the Conference. For those who may have interest in just one symposium or seminar, registration for the conference is not required to attend these activities. This allows maximum flexibility for those who may want to participate during the Digital Communications Conference, but do not have an entire weekend to devote to the event.

The Fourth APRS National Symposium will be held on Friday and will be moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely include many APRS software authors, such as Bob Bruninga, WB4APR (the father ofAPRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), Mike Musick, N0QBF (developer of PocketAPRS), and other nationally known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

On Saturday night the DCC Banquet will be held. A guest speaker will speak after the banquet and a prize drawing will top the evening. The Grand Prize is a Palm VII Personal Digital Assistant.

The Sunday morning seminar will be focused on PIC development, design, and programming. This five-and-a-half hour seminar will focus on the things you need to know now in order to understand and begin to participate in PIC development.

Co-Hosts
The 2000 ARRL and TAPR Digital Communications Conference local co-hosts will be Lake Monroe Amateur Radio Society (http://www.qsl.net/lmars/),Orange County ARES/RACES(http://evcom.net/~jvoisin/ares.htm), Seminole County ARES/RACES (http://wwww.geocities.com/capecanaveral/launchpad/4773), and Orlando Amateur Radio Club(http://www.oarc.org/).

International Co-Hosts PRUG (Packet Radio User Group of Japan) will be the International co-host for a third year running. PRUG will be hosting an informal social Friday evening before their seminar and symposium is held. Visit http://www.prug.or.jp for more information about PRUG.

Call for Papers
Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the Conference is not required for publication. Papers are due by August 7th, 2000, and should be submitted to

Maty Weinberg, ARRL
225 Main Street
Newington, CT 06111

or via the Internet to

   lweinberg@arrl.org

Information on paper submission guidelines are available on-line at

   http://www.tapr.org/dcc

Hotel
Conference presentations, meetings, and seminars will be held at the Orlando Airport Marriott. It is highly recommended that you book your room prior to arriving. A special DCC room rate of $89/single and $89/double per night has been blocked for 50 rooms and is available until September 1st, 2000. Once the 50 rooms have been reserved, room

rates will increase. So be sure to book your rooms early! The hotel provides transportation to and from the Orlando International Airport. Please contact the hotel to arrange specific transportation needs.

Orlando Airport Marriott (conference hotel)
7499 Augusta Drive
Orlando, FL 32822
Phone 407-851-9000, Fax 407-857-6211
(http://marriotthotels.com/MCOAP/)

What you can expect at DCC 2000
- A full day of papers and breakouts for the beginner to the advanced
- Two seminars/symposiums
- The fifth annual Student Paper session.
- A banquet with Special Guest Speaker.
- Informal get-togethers throughout the weekend.
- TAPR Membership Meeting
- An event at which the most important new developments in amateur digital communications are announced.
- Digital 'movers and shakers' from all over the world in attendance.

There are few activities where your participation can be so much fun and important! What a great way to share and renew your enthusiasm for digital amateur radio! A get-together with colleagues and bringing each other up to date on your latest work -- all this, and more, for an unforgettable weekend of amateur radio and digital communications. We hope to see you at the ARRL and TAPR Digital Communications Conference on September 22-24, 2000!

Full information on the conference and hotel information can be obtained by contacting:

Tucson Amateur Packet Radio
Phone: (940) 383-0000.
Fax: (940) 566-2544
Email: tapr@tapr.org
Web: http://www.tapr.org

Registration Form
Contact the TAPR office by Phone 940-383-0000, Fax 940-566-2544, or Internet: http://www.tapr.org and tapr@tapr.org to register or for additional information.

Conference Registration includes: Conference Proceedings, Sessions, Meetings, and Lunch on Saturday.

- Pre-Registration (before Sept 1st)

$45.00 _____

- Registration (after Sept 1) or at door

$55.00 _____

- Saturday Evening Dinner (Limited Space)
Dinner with Guest Speaker
Prize Drawing

$30.00 _____

Symposia/Seminars

- 4th Annual APRS National Symposium
Friday, 1pm - 7pm. $25.00 _____

- Sunday Seminar
PIC Design, Development, and Programming

Sunday, 8:30 am - 2 pm. $20.00 _____

TOTAL _____

Name/Call:

Street Address:

City/State/Zip:

Country:

Phone Number:

Email:

Charge my credit card (circle one):

VISA   MasterCard

Acct:

Expiration Date:

Signature on card:

Mail completed registration form with check to:
TAPR
8987-309 E Tanque Verde Rd #3378
Tucson, AZ 85749-9399

Or check http://www.tapr.org/dcc for an on-line registration form.

A registration packet will be mailed in September upon receipt of
registration form and payment.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] RE: Rain Gauge Fixed!

From: William Beals <will@beals5.com>
Date: Tue, 18 Jul 2000 20:24:49 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97286-2000.07.18-22.02.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

I guess that falls under "mechanical issues" somehow!

will

-----Original Message-----
From: Debbie Beckwith [SMTP:beckwd@earthlink.net]
Sent: Wednesday, July 19, 2000 12:09 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Rain Gauge Fixed!

You can imagine my dissapointment when within a month of being installed, my
rain gauge promptly quit! Confident in my wiring and installation, I was
sure I had a bad unit. When I finally checked the unit I found the "tipper"
had been securely fastened to its frame by a spider web! A little hosing
out, and my rain gauge is back on line.

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@8#`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
```

```
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`>````4D4Z(%MW>'-I
M9UT@4F%I;B!'875G92!&:7AE9"$`OPD!!8 #``X```#0!P<`$@`4`!@`,0`"
M`$\!`2" `P`.````T <''!(`% `6`"(``@`^`0$)@ $`(0```#$X,$%"-48X
M130U0T0T,3%!.#4V,# P,$4X.4(S0S Y`!4'`0.0!@"@!@``(0````L``@`!
M````"P`C``````#`"8``````L`*0```````P`N``````#`#8``````$ `
M.0! U&F#*/&_`1X`< `!````'@```%)%.B!;=WAS:6==(%)A:6X@1V%U9V4@
M1FEX960A`````@%Q``$````6`````;_Q*(-@^+4*&5SD$=2H5@``Z)L\"0``
M'@`># $````%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC
M;VT``P`&$,ZFT 4#``<0:@(``!X`"! !````90```%))0T@Z24=515-35$A!
M5$9!3$Q354Y$15(B345#2$%.24-!3$E34U5%4R)33TU%2$]75TE,3"TM+2TM
M3U))1TE.04Q-15-304=%+2TM+2U&4D]-.D1%0D))14)%0TM7251(4TT`````
M`@$)$ $```"!`P``?0,``+D$``!,6D9U>JFH0S\`"@$#`?<"I /C`@!C:,$*
MP'-E=# @!Q,"@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+
M@&3:- Q@8P!0"P-C`$$+8,!N9S$P,S,+I@?P.FD/8#H*H@J$"H!)(+9G"E $
M$70/< 5 9@= FFP$('44T 20("('@&L/80,`8P= ( 0!&#$B!"!S`W!E:&]W
M(1\72@/P&/ 72@KT;&DSGC8!0!6@`4 1,&]T!9!"=!!T,38@+1\23RT%$&<+
M@!HA31A!86=^91\3%T8>)!WQ"Q,>)FDP+3$T- % '7 Q.(XP`4 ,T"*S8B!&
M`V$+%S ,DF(/T$1E8F)I") @0@60:P/P&( @@%M33510.F(E4CAD0&4*P!B
M'7!N:_0N;@^P71=%(^ &8 (P#21'5PF )T!S9&%Y`"P@2G5L>2 Q'CDI< '0
M(T IT#(Z,) Y(%!-)X=4;R1'4%1!4%(HT%@&`'#S!9 ',2!)`C $D >0!4 2
M1P-@=7 GB'5B:B,>421'6W=X`)!G76<'\ MQ+;!A=2! (_!I_G@)@!M'(3\>
M4AUT"[874^L*XPJ 60A@(!H0`Z '<%<@, N )2!M*<!D! %A-'!O"X!T!X "
M,"!WWF@)\#:P)9$P06$UD (AL26P;V8@)C +@&<:0'\`@ &0&/ )@"EP-: 7
M1')M,#)G,(,>$6T%,"FQ<:)U)9 A(" (4&XB@/\!`#:1,$$UH0/P!1 X80!P
M=F0XAAB@:0(@*7 8`'?^80\P%U,:< EP/?$/<#T`73> 8C\Q&3 ED"X[4%?_
M-M(8`"* '[$IL0]@)5$)@'\8<24@/\) <@A@//%!HB+E/:!P+,!R(A=$/R(F
M,/LVX0^@8S[!*;$8T"V0"?"U07)O&D!T!" #4&$'@&<X("G -X!S<#NQ!<!W
M\R3@.T%!(!UP`D X\#\0WF\`D!8`%T0(8'0I<#SB_S6A.<D$`#]Q)6 W\ .@
M)O%<92X72A;R)3A7"@!X_QQ>"H @AS2B"L E($2!"7#W`C IL1IP8@3R)C!%
M8R^S>3=P<SHVL ;0)J 9`$#+!: ZH'4/H')V2Q!1X?\71"N &2%/YT11//$_
M817AO4J090# `Q%%@3CP85)@!BTOLR*@-3<P-TUF0!UP+9!S+@&0$3 N+P6P
M2%471!'Q`%B `````P`0$ `````#`!$0``````,`@!#_____0 `', "Y`3,H
M\;\!0 `(, "Y`3,H\;\!"P``@ @@!@``````P ``````$8``````X4`````
M```#``* "" &``````# ````````1@`````0A0````````,`!8 (( 8`````
M`, ```````!&`````%*%``"W#0```P`)@ @@!@``````P ```````$8`````
M`84````````>`"* "" &``````# ````````1@````!4A0```0````0````X
M+C `"P`F@ @@!@``````P ```````$8`````#H4````````#`"> "" &````
M``# ````````1@`````1A0````````,`*8 (( 8``````, ```````!&````
M`!B%````````'@`X@ @@!@``````P ```````$8`````-H4```$````!````
M`````!X`.8 (( 8``````, ```````!&`````#>%```!`````0````````>
M`#J "" &``````# ````````1@`````XA0```0````$`````````'@`]``$`
8``%```4D4Z( `````#``TT_3<``,&"
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

63. [wxsig] Re: Ultimeter WX Data Decoding

From: Brian Short <k7on@earthlink.net>
Date: Wed, 19 Jul 2000 03:34:03 +0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97296-2000.07.18-22.39.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

That URL has all of the answers. A friend just bought one and
I was helping him get it going.

Thanks, Brian

At 03:52 PM 7/18/00, you wrote:
>Brian Short wrote:
> > Is there a source for the entire format of the Peet Brothers U-100?
>
>http://www.peetbros.com/faqs.htm#Q6

--
Seek those who find your road agreeable, your personality and mind
stimulating, your philosophy acceptable, and your experience helpful.
Let those who do not, seek their own kind. -Henri Fabre
--
mailto:k7on@earthlink.net
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] Re: Rain Gauge Fixed!

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 18 Jul 2000 22:47:20 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97308-2000.07.18-23.52.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich,

I'm having the opposite problem with my rain gauge, i.e. it reads high. I have seen times when I'm sure that it is double counting the tips. After reading your letter, I decided to take the cover off and see if I had something strange like you did. Didn't find anything out of the ordinary. So, I poured water into the tipper mechanism and it all seemed to work fine. I did 50 tips with water and each one counted as .01", so I'm not sure what's wrong. Next, I suppose that I'll recalibrate it. Wish that I'd have found the culprit like you did. Oh well.

Russ
kb0tvj

----- Original Message -----
From: Debbie Beckwith <beckwd@earthlink.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Wednesday, July 19, 2000 12:09 PM
Subject: [wxsig] Rain Gauge Fixed!

> You can imagine my dissapointment when within a month of being installed, my
> rain gauge promptly quit! Confident in my wiring and installation, I was
> sure I had a bad unit. When I finally checked the unit I found the "tipper"
> had been securely fastened to its frame by a spider web! A little hosing
> out, and my rain gauge is back on line.
>
> Rich Beckwith Wn0x
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] Re: Rain Gauge Fixed!

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 19 Jul 2000 23:50:08 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97309-2000.07.18-23.57.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What kind of wire are you using to connec the rain gauge, distance etc? Do you have any RFI suppression? My method for calibration was to connect it directly to my computer inside the house and have it count for me. You may have a bad reed switch, and the noise is sending extra counts, even if the bucket trips once. You will find this out for sure if you watch it count as you add water, and listen for the trip. It should increment once for every .01 inches of rain.

----- Original Message -----
From: Russ Chadwick <crb5@uswest.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Tuesday, July 18, 2000 11:47 PM
Subject: [wxsig] Re: Rain Gauge Fixed!

> Rich,
>
> I'm having the opposite problem with my rain gauge, i.e. it reads high. I

> have seen times when I'm sure that it is double counting the tips. After
> reading your letter, I decided to take the cover off and see if I had
> something strange like you did. Didn't find anything out of the ordinary.
> So, I poured water into the tipper mechanism and it all seemed to work
fine.
> I did 50 tips with water and each one counted as .01", so I'm not sure
> what's wrong. Next, I suppose that I'll recalibrate it. Wish that I'd
have
> found the culprit like you did. Oh well.
>
> Russ
> kb0tvj
>
> ----- Original Message -----
> From: Debbie Beckwith <beckwd@earthlink.net>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Sent: Wednesday, July 19, 2000 12:09 PM
> Subject: [wxsig] Rain Gauge Fixed!
>
>
> > You can imagine my dissapointment when within a month of being
installed,
> my
> > rain gauge promptly quit! Confident in my wiring and installation, I
was
> > sure I had a bad unit. When I finally checked the unit I found the
> "tipper"
> > had been securely fastened to its frame by a spider web! A little
hosing
> > out, and my rain gauge is back on line.
> >
> > Rich Beckwith Wn0x
> >
> >
> > ---
> > You are currently subscribed to wxsig as: crb5@uswest.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: wn0x@earthlink.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

66. [wxsig] Re: Rain Gauge Fixed!

From: David Norris <dave@webaugur.com>
Date: Wed, 19 Jul 2000 01:18:58 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97344-2000.07.19-01.24.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ Chadwick wrote:
> I'm having the opposite problem with my rain gauge, i.e. it reads high. I

I had that problem not long ago. I found that the weather had corroded
the wires to the rain gauge. I had a leak in my aqua seal at a junction
point where the wire came into the house. It was reading something like
1 inch for every 1/10 that fell. At times I'd read rainfall when it was
dry.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

67. [wxsig] Re: Ultimeter WX Data Decoding

From: "Joe B. Dorn" <joedorn@stonemedia.com>
Date: Wed, 19 Jul 2000 09:37:31 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97381-2000.07.19-09.43.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I expect that you will need to contact Peet Brothers for this info. I have found them to be very helpful on items such as this. I have the U2k....

Joe Dorn, W5VEX, Belton, Texas

-----Original Message-----
From: bounce-wxsig-16324@lists.tapr.org
[mailto:bounce-wxsig-16324@lists.tapr.org]On Behalf Of Brian Short
Sent: Monday, July 17, 2000 11:02 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Ultimeter WX Data Decoding

Is there a source for the entire format of the Peet Brothers U-100?

I'm sorry if this is repeated question, but I don't have the information and have not found it very efficiently as yet.

TIA, Brian

At 09:57 AM 7/14/00, Ian Wade wrote:
>I'm adding Ultimeter WX decoding to <APRSdec>, but I have a few
>questions:
>
>Ultimeter II
>------------
>   What are the "upper" and "lower" rain gauges?
>
>   How does anyone reading the data know whether to divide the upper and
>   lower rain gauge values by 10 or 100?
>
>
>Ultimeter 2000 Packet Mode ($ULTW mode)
>---------------------------------------
>   What is the barometer delta value?
>
>   What is the barometer correction factor?
>
>   What is the algorithm for applying the correction?
>
>   Does field 12 contain "Rain Long Term" or "Today's Rain Total"?

--
Seek those who find your road agreeable, your personality and mind stimulating, your philosophy acceptable, and your experience helpful. Let those who do not, seek their own kind. -Henri Fabre
--
mailto:k7on@earthlink.net
--

You are currently subscribed to wxsig as: joedorn@stonemedia.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] T238 Board

From: Anson Mount <amount@execpc.com>
Date: Wed, 19 Jul 2000 10:10:06 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97399-2000.07.19-10.15.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

So should I send my money now or wait until the board is ready?
I just finished constructing my DalSemi 1 wire weather station and rain gauge and all work very well. I wold like to get it on the air but is there another way to do this without the T238 board? I use a Mac for APRS.

Thanks.... Anson / n9rjx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] RE: T238 Board

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Wed, 19 Jul 2000 11:15:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97403-2000.07.19-10.20.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Anson,

If you pre-order now, your credit card (if that's your choice of payment)
will not be charged until the kit ships.

Kit status to follow in a separate email.

 - Steve, N7HPR
   n7hpr@tapr.org

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Anson Mount
> Sent: Wednesday, July 19, 2000 11:10 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] T238 Board
>
>
> So should I send my money now or wait until the board is ready?
> I just finished constructing my DalSemi 1 wire weather station and rain
> gauge and all work very well. I wold like to get it on the air but is
> there another way to do this without the T238 board? I use a Mac for
> APRS.
>
> Thanks.... Anson / n9rjx
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

70. [wxsig] T-238 Kit Status 7/19/00

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Wed, 19 Jul 2000 11:29:44 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97404-2000.07.19-10.34.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This past weekend three of the Rev 2 PCB T-238's kits were constructed and
operating. There is one minor PCB error that the user will require cutting
two traces and adding one blue wire. This will be documented in the
assembly manual.

If all goes as planned (unless UPS wants to change my plans for me :-), the
last two parts needed to complete the T-238 kit should arrive this
afternoon. That will complete the parts envelopes. Editing of the assembly
manual should be complete this week and sent to the printers.

Once the kits are completed, they will be shipped in bulk to the TAPR office
for processing and shipping. Those who have pre-ordered will hopefully
start seeing their kits late next week.

The initial kitting of the T-238 is for 100 kits. Since Dallas
Semiconductor has discontinued the 1-Wire Weather Station, we are assessing
other alternatives. Anyone that would like to suggest constuction of

weather instruments is encouraged to bring your ideas to the list. Further
kit development and/or revisions to the T-238 will depend upon you, the
user. TAPR will continue supporting development and kits if the interest
and demand are there. Let us know your thoughts via the WXSIG list.

 - Steve, N7HPR
   n7hpr@tapr.org

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] RE: T-238 Kit Status 7/19/00

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Wed, 19 Jul 2000 10:35:45 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97406-2000.07.19-10.41.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Would it be economical to develop a board and make a duplicate (more or
less) of the 1-wire station? I would think it would, and the "weatherproof
coating" is easy to duplicate using thinned Dip-It (or Tool-Dip). The only
snag would be developing the anemometer cups and attachment, but I don't
think that would be all that difficult, either. The rest of the items could
fit in any suitable box, or even a PVC pipe enclosure.

Just my two cents... I'll accept change!

Jack KE4LWT

> The initial kitting of the T-238 is for 100 kits. Since Dallas
> Semiconductor has discontinued the 1-Wire Weather Station, we
> are assessing
> other alternatives. Anyone that would like to suggest construction of
> weather instruments is encouraged to bring your ideas to the
> list. Further
> kit development and/or revisions to the T-238 will depend
> upon you, the
> user. TAPR will continue supporting development and kits if
> the interest
> and demand are there. Let us know your thoughts via the WXSIG list.
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>
>
>
> ---
> You are currently subscribed to wxsig as:
> jack.smith1@usarc-emh2.army.mil

> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

>

72. [wxsig] Options to DalSemi Wx Kit

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Thu, 20 Jul 2000 11:42:10 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97418-2000.07.19-11.49.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

RE: [wxsig] T-238 Kit Status 7/19/00Guys, check out the following link. http://www.weatherstamp.com I had been
looking at this company before I heard about the T238 and Dallas WX kit in Dayton this year. This
link http://www.columbia-center.org/fascinating/obs/instrmnt.html has
instruments that can be built, although they would have to be modified for
1-wire.

73. [wxsig] Re: Rain Gauge Fixed!

From: Ray Vaughan <kd4bbm@bellsouth.net>
Date: Wed, 19 Jul 2000 13:38:08 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97423-2000.07.19-12.43.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 01:09 PM 7/19/00 -0500, you wrote:
>You can imagine my dissapointment when within a month of being installed, my
>rain gauge promptly quit! Confident in my wiring and installation, I was
>sure I had a bad unit. When I finally checked the unit I found the "tipper"
>had been securely fastened to its frame by a spider web! A little hosing
>out, and my rain gauge is back on line.

I can beat that one. My station's wind cups were neatly sewn into place by a spider. No idea why,
but I guess she found those spinning cups to be annoying. From the placement, the only thing the treads
were doing was stopping the cups. Very strange.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

74. [wxsig] Re: Rain Gauge Fixed!

From: "Steven R. Bible" <steveb@dandin.com>
Date: Wed, 19 Jul 2000 14:26:09 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-97430-2000.07.19-13.31.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> At 01:09 PM 7/19/00 -0500, you wrote:
> >You can imagine my dissapointment when within a month of being
> installed, my
> >rain gauge promptly quit! Confident in my wiring and installation, I was
> >sure I had a bad unit. When I finally checked the unit I found
> the "tipper"
> >had been securely fastened to its frame by a spider web! A little hosing
> >out, and my rain gauge is back on line.
>
> I can beat that one. My station's wind cups were neatly sewn
> into place by a spider. No idea why, but I guess she found
> those spinning cups to be annoying. From the placement, the only
> thing the treads were doing was stopping the cups. Very strange.

And was there writing in the web something like "Some Pig" ?

(I'm sorry, I just had to do this :-).

- Steve, N7HPR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

75. [wxsig] RE: Options to DalSemi Wx Kit

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Wed, 19 Jul 2000 19:30:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-97477-2000.07.19-19.36.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You know... if these people could be talked into just providing the works, and a kit could be made using the 1-wire chips...

Just thinking out loud. Shoot me if you think I'm crazy.

Jack KE4LWT

-----Original Message-----
From: Rich Beckwith [mailto:wn0x@earthlink.net]
Sent: Thursday, July 20, 2000 11:42 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Options to DalSemi Wx Kit

Guys, check out the following link. http://www.weatherstamp.com <http://www.weatherstamp.com> I had been looking at this company before I heard about the T238 and Dallas WX kit in Dayton this year. This link http://www.columbia-center.org/fascinating/obs/instrmnt.html <http://www.columbia-center.org/fascinating/obs/instrmnt.html> has instruments that can be built, although they would have to be modified for 1-wire.

76. [wxsig] RE: T-238 Kit Status 7/19/00

From: William Beals <will@beals5.com>
Date: Sun, 23 Jul 2000 18:58:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98107-2000.07.23-21.09.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Out since last wednesday between a business trip and long weekend camping...

Jack: Such things are definitely being looked at, but it is a lot of work before anything definite.

will

-----Original Message-----
From: Smith, Jack R SGT 658 QM CO [SMTP:Jack.Smith1@usarc-emh2.army.mil]
Sent: Wednesday, July 19, 2000 9:36 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: T-238 Kit Status 7/19/00

Would it be economical to develop a board and make a duplicate (more or less) of the 1-wire station? I would think it would, and the "weatherproof coating" is easy to duplicate using thinned Dip-It (or Tool-Dip). The only snag would be developing the anemometer cups and attachment, but I don't think that would be all that difficult, either. The rest of the items could fit in any suitable box, or even a PVC pipe enclosure.

Just my two cents... I'll accept change!

Jack KE4LWT

>

> The initial kitting of the T-238 is for 100 kits. Since Dallas

> Semiconductor has discontinued the 1-Wire Weather Station, we

> are assessing

> other alternatives. Anyone that would like to suggest construction of

> weather instruments is encouraged to bring your ideas to the

> list. Further

> kit development and/or revisions to the T-238 will depend

> upon you, the

> user. TAPR will continue supporting development and kits if

> the interest

> and demand are there. Let us know your thoughts via the WXSIG list.

>

> - Steve, N7HPR

>   n7hpr@tapr.org

>

>

>

> ---

> You are currently subscribed to wxsig as:

> jack.smith1@usarc-emh2.army.mil

> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

>

 << File: ATT00000.html >>


```
begin 600 WINMAIL.DAT
M>)\^(B("`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, ,````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````V-D`02 `0`I````4D4Z(%MW>'-I
M9UT@4D4Z(%0M,C,X($MI="!3=&%T=7,@-R\Q.2\P, !U"P$%@ ,`#@```- '
M!P`7`!(`.@`;````7 $!(( #``X```#0!P<`%P`2`#H`&P```%P!`0F `0`A
M````.34Q,S4U0D9#,S8P1#0Q,4$X-38P,# P13@Y0C-#,#D`]08!`Y &`"P)
M```A`````"P"``$````+`",````````,`)@``````"P`I````````#`"X`````
M``,`-@``````0 `Y`,!GF48*];\!'@!P``$````I````4D4Z(%MW>'-I9UT@
M4D4Z(%0M,C,X($MI="!3=&%T=7,@-R\Q.2\P, `````"`7$``0```!8````!
MO_4*&PZ_51.68,,1U*A6``#HFSP)```>`!X,`0````4```!33510`````!X`
M'PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80>!FP< ,`!Q 6!0``'@`(
M$ $```!E````1D],2U,Z3U544TE.0T5,05-45T5$3D531$%90D545T5%3D%"
M55-)3D534U1225!!3D1,3TY'5T5%2T5.1$-!35!)3D=*04-+.E-50TA42$E.
M1U-!4D5$149)3DE414Q90D5)3@`````"`0D0`0````,&``#_!0``<PD``$Q:
M1G47%]E)`P`*``)C<&<Q,C4^,@#T`?<"I /C`@!C:,$*P'-E=# @!Q,"@T,`
M4 ^F<')Q,A"F?;,*@ C((#L);PXP-0* )0J!=@B0=VL+@&0T;0Q@8P!0"P-C
M`$$+8&Z1#A P,S,+IB!&!O X:W,Z"J(*A J 3W5#!4 `D&YC92 +8',5!4!W
M"8!N!Y!D87F<(&(0<!G "? @81I0[G49$0>0!"!T!1$:T!60RQE@`B!G&;%E
M:PGP' "08V%M< N 9RX=8,48&DH`T&LZ( 8`%=#Z:!N :!TQ!" *P!E0`0'A
M"X!I=&5L&D(=,1P1QF\<H!P`870L&O$%0)\@$"&P'V$<$05 ;V89L+T%L&L:
M40(0'Y$`<'D?$W<?MQV+`_!L"5 8*0KT;/AI,S8!0!9@`4 1\")0A060=!$T
M,38@+2A2>D\%$&<+@ = != ;46'\9V4H4Q@6)V0G,0L3)V9@:2TQ-#0!0":P
M,=PX, % #- K\V(7H -A2Q@`#))B$)!3;2 0: \A8!Y2!_ &`$=4(#8`-3@@
M44T@0T^ (%M33510.AY2,BXN$S% &Q *P&,M(&5M:#(N"L!M>?(N+B!L71@5
M+2 &8 (P+2V'5QG6+F%U($$Q.<<A8 '0+( @.3HFT!"@$DTR-U1O+8=405!I
M+M!76 8`< 60!S$@7DD", 20!Y %0$<#8'5B<#(X=6)J)Y$MAUND=W@`D&==
M!_!%'I!05"TR,R]02R'!4T4!D'0;$" W+S20+_\L@2H/*QDFM NV&",*XPJ
MNE<(8&P<`"'!&F @!9%.;@-P#> I`71O'[%V[2 P;QO!&E!O"Q$;TP# >QR@
M&M%D.) FL!SP(" @7B@$8!^1!; 8%&P;42GG(G(?$!E0,2T#\!^1&9#5(4!I
M`B _'J!)(J% $G\?$B+@(<%&PR%@&^)%4B+W&< A0$5@<B=1(H 8% 6@VT8A
M%L B(>)(P',:0$%BOT-7&Q(<4!\2&? <`$0%('0M205 * 6Q-B &\"WI3)$I
M+AZ@5$5A`B @0/T8%',H\!Q10 - @4&52]3_(U(Q4 -P$' $D!S@.) ?8?\;
M\2% `9 0( > `C A9$:@^F0"("<GL!@C1R0?$"% [T\H!T!!050R9 :0'^!1
M8/YL(5$@@$CB3=4X$T4E(!'^;00@!:! $1@4'^ AH1K!>R. &0!U(! !H$3
M0B%X#R%@!;%!H1K"4%9#(/\=(#=@0* 9, D`69 )<!V+_QV;&Q %0#' &X B
ML!S@,M'V<QUA1H$G51$`T!E !3%S$"$6P&4A7*\=Z3M01; T3%=48+\893X_
MA?]CIDX"'_(WDA5P`D @DD4E_SL$(?$C(32 -/%EP5[ 'J']&2-$50$9@&-,
```

```
M!F!!`0(@_T- )Z %L1 P!"!5D 3P`B'O"X *4$A$19!71<(SD$C3_SN31D$A
M8!G 9!T?@AF $&#_!! =,6-,(E!LL@= -_$H\/=&,$&P9_)!(X "(!E05"GO
M)K!"\4%A69!G*8 9D4#!_1F0<FI11D$B<6-,2+59$?]SXE)2!"!*8ADP"&$I
M<4<!_4%P8@40'$%QL AP(; !``]JP4%A15)C3":P&9!-T49_"'!(XF-,9<%!
MAE)2&](O_P6Q"7 5, "0<\%XUCL$)5+_'[$W8!OQ8TPXD'11>#$A8/]%47^=
M$&!6DS;B?M-K)EF!_G" @ `@(\1\6V>S(; BD/]C3%>3-^5MO1OQ`0`#@2$A
M[Q^12.(D<!Z@3!!P2Z%EL)] X ?@>#,?$ A@9VAVD8\5,!K@15(W(%-)1WHD
M/V-/C.DH0#N10:$A8$XWCD@V\(V='J!N-V@1\/9 `9 1\"X%L&]=D5^2;W>3
M=BG)DY19"& ?<U%@<N\)< (P($%9D&($\AI@=X.O.E-NP1Z0DQQJ,$)S,)_W
M,:9D+4%P=0" EQ89`!RR?QKA%J$BX(C!`Q%!843 80]!L$6@.F(KX#4W,#<\
M34!Z,E[ D-^3J2 \%CP7H ,091Z00514JS3A+( NBT!M`R ^9 8%$K$`I" `
M`P`0$ `````#`!$0`@````,`@!#_____0 ``,*#/Q0D*];\!0 `(,,!GF48*
M];\!"P``@ @@!@``````P ```````$8``````X4````````#``* "" &````
M``# ````````1@`````0A0````````,`!8 (( 8``````, ```````!&````
M`%*%``"W#0```P`)@ @@!@``````P ```````$8``````84````````>`"*
M"" &``````# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``
M````P ```````$8`````#H4````````#`"> "" &``````# ````````1@``
M```1A0````````,`*8 (( 8``````, ```````!&`````!B%````````'@`X
M@ @@!@``````P ```````$8`````-H4```$````!`````````!X`.8 (( 8`
M`````, ```````!&`````#>%```!`````0`````````>`#J "" &``````#
M````````1@`````XA0```0````$`````````'@`]``$````%````4D4Z( ``
,```#``TT_3<``+UI
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

77. [wxsig] Auto Wx Discussion Group

From: "Dale Huguley" <kg5qd@earthlink.net>
Date: Mon, 24 Jul 2000 10:34:52 -0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98171-2000.07.24-05.43.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All-
    I have a need to discuss automatic NWS aprs weather stuff and spoke to Steve Dimse at Dayton about it. He suggested doing it here on the wxsig. However I have watched the discussions for two months or so and see nothing outside of messages concerning the T-238. I would rather not muddy the waters and cause your delete keys to wear out prematurely. It would be easy enough to set up a discussion group on another system. Let me know the group attitude.

73 de kg5qd Dale

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

78. [wxsig] RE: Auto Wx Discussion Group

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Mon, 24 Jul 2000 09:00:55 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98186-2000.07.24-08.06.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dale,

I created this list to discuss "amateur radio related weather stuff." If the topic fits into those five words, then have at it. If the topic gets specialized and there is a need to create another list, I can do that on the TAPR site. That's what your dues pay for :-).

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Dale Huguley
> Sent: Monday, July 24, 2000 6:35 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Auto Wx Discussion Group
>
>
> Hi All-

> I have a need to discuss automatic NWS aprs weather stuff and spoke to
> Steve Dimse at Dayton about it. He suggested doing it here on the wxsig.
> However I have watched the discussions for two months or so and
> see nothing
> outside of messages concerning the T-238. I would rather not muddy the
> waters and cause your delete keys to wear out prematurely. It
> would be easy
> enough to set up a discussion group on another system. Let me know the
> group attitude.
>
> 73 de kg5qd Dale
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

79. [wxsig] Re: Auto Wx Discussion Group

From: JerryJAE4XW@cs.com
Date: Mon, 24 Jul 2000 10:38:05 EDT
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98219-2000.07.24-09.43.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Dale

I too monitor this group and have never been interested in the T-238, I have had a Radio Shack weather station on APARS for quite a while now and like it just fine. If we could set up a separate group that's fine by me but really think everyone would be interested in all the different models and problems.

Jerry AE4XW ae4xw@arrl.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] Re: Auto Wx Discussion Group

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Mon, 24 Jul 2000 10:57:51 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98221-2000.07.24-10.02.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Let me emphasis one last time...

This is the Weather SIG, not the T-238 sig. It was not created to talk about the T-238 solely. We all can learn from other instruments including the T-238 and how they all relate to amateur weather monitoring and reporting.

Talk about the weather all you want. As long as it pertains to amateur radio and the weather, any topic under the sun (pun intended :-) is game here.

And as I mentioned, if the topics splinter necessitating another list, then we'll intertain creating another list at that time.

Clear enough? (or at least partly cloudy :-)

- Steve, N7HPR
  n7hpr@tapr.org

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of
> JerryJAE4XW@cs.com
> Sent: Monday, July 24, 2000 10:38 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: Auto Wx Discussion Group
>

>
> Hi Dale
>
> I too monitor this group and have never been interested in the
> T-238, I have
> had a Radio Shack weather station on APARS for quite a while now
> and like it
> just fine. If we could set up a separate group that's fine by me
> but really
> think everyone would be interested in all the different models
> and problems.
>
> Jerry AE4XW ae4xw@arrl.net
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] Non-T238 stuff

From: William Beals <will@beals5.com>
Date: Mon, 24 Jul 2000 20:49:02 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98324-2000.07.24-22.22.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Dale: I'm certainly a fan of more information is better! Yea, we are
concentrating quite a bit about T238, but that can and will change. The
only reason we are concentrating mostly on the board and firmware is that
at least for round 1 I think most of us are comfortable with the theory
(and limitations) of what we have and havn't thought too much about
applications yet. Both aspects are certainly capable of re-visiting or
visiting for the first time.

If nothing else, the lack of Dallas weather stations are certainly fueling
discussions about alternative sensors.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

82. [wxsig] Re: radiation shield

From: David Fullmer <fullmer@tera.com>
Date: Tue, 25 Jul 2000 09:44:01 -0700 (PDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98434-2000.07.25-11.49.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'd like to see what you've come up with.... Thanks

> I've made four radiation shields to shield the temperature (and soon
> humidity) sensors from solar insolation. If the Dallas 1-Wire wx station is
> placed in the sun, it will have errors approaching 20 deg F. This shield
> prevents thw sun from shining on the sensor and lets the cross wind carry
> away the heat due to the direct sun. I've written up how to do this, but
> need to add the part about building the mount.

>
> I have three pictures of the shield and mounting. It will mount on a 1"x1"
> or larger square tube. I wouldn't mount it next to the anemometer because
> it could affect the wind being measured. My pictures are all bigger than
> the 100 KB limit for e-mails to the wxsig. So, if anyone would like the
> pictures, just send me an e-mail and I'll send the pictures back to you.
>
> Russ
> kb0tvj

David Fullmer
CRAY Incorporated
206-701-2077

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

83. [wxsig] ARRL and TAPR 19th Annual Digital Communications Conference

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Tue, 25 Jul 2000 16:28:43 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98485-2000.07.25-15.33.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

ARRL and TAPR   19th Annual
Digital Communications Conference
September 22-24, 2000 - Orlando, Florida

For more information see: http://www.tapr.org/dcc

Information
Mark your calendar and start making plans to attend the year's premier
event in digital communications. The 19th Annual ARRL and TAPR
Digital Communications Conference will be held September 22-24, 2000,
in Orlando, Florida - just minutes from the Orlando International
Airport.

The ARRL and TAPR Digital Communications Conference is an
international forum for radio amateurs in digital communications,
networking, and related technologies to meet, publish their work, and
present new ideas and techniques for discussion. Presenters and
attendees will have the opportunity to exchange ideas and learn about
recent hardware and software advances, theories, experimental results,
and practical applications. The Digital Communications Conference is
not just for the digital expert, but also for digitally oriented
amateurs of all levels of experience.

A Conference for the Beginner as well
The conference is not just for the digital expert. As in years past
an entire session strand with beginning, intermediate, and advanced
presentations on selected topics in digital communications will be
offered. Some of the topics will include: APRS, Satellite
Communications, TCP/IP, Digital Radio, Spread Spectrum and other
introductory topics. Come to the conference and hear these topics
presented by the experts!

Area Attractions
The Orlando Florida area is famous for its attractions and vacation
spots. Disney World, Universal Studios, and Sea World (just to name a
few) are within 15 minutes of the hotel. Shuttle service from the
hotel will be available for a small fee. Cape Canaveral and Cocoa
Beach are a 30 minute drive East of the hotel.

Symposia, Seminars and Banquet
Two symposia/seminars will be held which allow those with additional
time and interest to make the most of the Conference. For those who
may have interest in just one symposium or seminar, registration for
the conference is not required to attend these activities. This allows
maximum flexibility for those who may want to participate during the
Digital Communications Conference, but do not have an entire weekend
to devote to the event.

The Fourth APRS National Symposium will be held on Friday and will be
moderated by Steve Dimse, K4HG (the developer of javAPRS). It will
likely include many APRS software authors, such as Bob Bruninga,
WB4APR (the father ofAPRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI
(the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the

developer of APRSPLUS), Mike Musick, N0QBF (developer of PocketAPRS), and other nationally known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

On Saturday night the DCC Banquet will be held. A guest speaker will speak after the banquet and a prize drawing will top the evening. The Grand Prize is a Palm VII Personal Digital Assistant.

The Sunday morning seminar will be focused on PIC development, design, and programming. This five-and-a-half hour seminar will focus on the things you need to know now in order to understand and begin to participate in PIC development.

Co-Hosts
The 2000 ARRL and TAPR Digital Communications Conference local co-hosts will be Lake Monroe Amateur Radio Society (http://www.qsl.net/lmars/),Orange County ARES/RACES(http://evcom.net/~jvoisin/ares.htm), Seminole County ARES/RACES (http://wwww.geocities.com/capecanaveral/launchpad/4773), and Orlando Amateur Radio Club(http://www.oarc.org/).

International Co-Hosts PRUG (Packet Radio User Group of Japan) will be the International co-host for a third year running. PRUG will be hosting an informal social Friday evening before their seminar and symposium is held. Visit http://www.prug.or.jp for more information about PRUG.

Call for Papers
Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the Conference is not required for publication. Papers are due by August 7th, 2000, and should be submitted to

Maty Weinberg, ARRL
225 Main Street
Newington, CT 06111

or via the Internet to

   lweinberg@arrl.org

Information on paper submission guidelines are available on-line at

   http://www.tapr.org/dcc

Hotel
Conference presentations, meetings, and seminars will be held at the Orlando Airport Marriott. It is highly recommended that you book your room prior to arriving. A special DCC room rate of $89/single and $89/double per night has been blocked for 50 rooms and is available until September 1st, 2000. Once the 50 rooms have been reserved, room rates will increase. So be sure to book your rooms early! The hotel provides transportation to and from the Orlando International Airport. Please contact the hotel to arrange specific transportation needs.

Orlando Airport Marriott (conference hotel)
7499 Augusta Drive
Orlando, FL 32822
Phone 407-851-9000, Fax 407-857-6211
(http://marriotthotels.com/MCOAP/)

What you can expect at DCC 2000
- A full day of papers and breakouts for the beginner to the advanced
- Two seminars/symposiums
- The fifth annual Student Paper session.
- A banquet with Special Guest Speaker.
- Informal get-togethers throughout the weekend.
- TAPR Membership Meeting
- An event at which the most important new developments in amateur digital communications are announced.
- Digital 'movers and shakers' from all over the world in attendance.

There are few activities where your participation can be so much fun and important! What a great way to share and renew your enthusiasm for digital amateur radio! A get-together with colleagues and bringing

each other up to date on your latest work -- all this, and more, for
an unforgettable weekend of amateur radio and digital communications.
We hope to see you at the ARRL and TAPR Digital Communications
Conference on September 22-24, 2000!

Full information on the conference and hotel information can be
obtained by contacting:

Tucson Amateur Packet Radio
Phone: (940) 383-0000.
Fax: (940) 566-2544
Email: tapr@tapr.org
Web: http://www.tapr.org

Registration Form
Contact the TAPR office by Phone 940-383-0000, Fax 940-566-2544, or
Internet: http://www.tapr.org and tapr@tapr.org to register or for
additional information.

Conference Registration includes: Conference Proceedings, Sessions,
Meetings, and Lunch on Saturday.

Mail completed registration form with check to:
TAPR
8987-309 E Tanque Verde Rd #3378
Tucson, AZ 85749-9399

Or check http://www.tapr.org/dcc for an on-line registration form.

A registration packet will be mailed in September upon receipt of
registration form and payment.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

84. [wxsig] Dallas Weather Station Set

From: "John D. Kerr" <jdkerr@projectx.com>
Date: Tue, 25 Jul 2000 19:14:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98518-2000.07.25-18.17.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

A few months back, I purchased the Dallas Semiconductor 1-Wire Weather
Station, along with the 1-Wire Rain Gauge. These units have gone virtually
untouched since I purchased them. I did do some testing in adding a second
DS1820 sensor on to the base system board (which has since been removed),
but other than that, the units have not been assembled.

Since there is much renewed interest in this unit, and Dallas has
discontinued the base 1-Wire Weather Station, and I have no immediate plans
to use the system, I would be interested in selling what I have.

If anyone is interested in purchasing these units as a pair, please email me
privately at john@projectx.com
For the successful purchaser, I will also include two extra DS18S20
temperature sensors.

Thanks,

John □ VE3SVE

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

85. [wxsig] Weather Station Plastic Molds.. Who makes them?

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 25 Jul 2000 20:08:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98524-2000.07.25-21.14.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The message below is from Dan Awtrey of Dallas Semiconductor with some
interesting information on the 1-Wire weather station. The message that he

is responding to is below that and is from a ham operator active in ATV.

I am trying to develop a homemade weather station like the 1-Wire unit using
PVC plastic plumbing parts. My hope is to be able to use a circuit board
based on the round part of the one in the 1-Wire weather station. I have
the case all done and it cost $11 in parts. I'm working on the bearings and
shafts next. A homemade lightweight 3 cup anemometer that is well-balanced
will probably be the hard part.

Russ
kb0tvj

>
>
> > -----Original Message-----
> > From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> > Sent: Tuesday, July 25, 2000 2:57 PM
> > To: 'ATVQ'
> > Cc: 'weather@ibutton.com'
> > Subject: [weather] RE: Weather Station Plastic Molds.. Who makes
> > them?
> >
> > Gene,
> >
> > You are correct that Texas Weather Instruments, Inc. was the source of
> > the plastic for the 1-Wire weather station promo. A check of the FAQ's
> > and archives will show that this has been mentioned repeatedly. Also
> > mentioned is that the plastic is UV inhibited and the shafts and
> > bearings are all stainless steel for the durability and quality that
> > users have appreciated and come to expect.
> >
> > As you imply, Dallas Semiconductor has made full public disclosure of
> > the electronic design for both the WS-1 weather station and the rain
> > gauge. The board layout which we also published in the trade journals
> > can obviously be used in plastics from another source. Now that our
> > supply of promotional weather stations has been exhausted we have
> > heard from several manufacturers expressing their intentions of
> > supplying the kit using new plastics. In the quantities that we
> > manufactured the materials-only cost of the WS-1 was less than $40. We
> > believe that the materials cost for the kit would be even less
> > assuming we were to meet the demands of today's order rates. Also, the
> > use of the direct on-line sales model contributed significantly to our
> > ability to offer the WS-1 at $79.
> >
> > It is not our place to announce the intentions of manufacturers or to
> > establish the price at which weather stations will be sold. Whether an
> > entrepreneur chooses to go the route of having molds made or use
> > materials at hand is a matter for them to decide. Our role is to make
> > 1-Wire chips better and cheaper as well as adding functionality for
> > new environmental sensors. It is also our strong viewpoint that all
> > 1-Wire instruments need to be web accessible and are targeting all new
> > product development toward that goal.
> >
> > We anticipate that announcements of affordable weather stations will
> > be made by instrument manufacturers in the coming months. Regrettably,
> > a surge in demand depleted our supply before others could meet the
> > demands of the marketplace. As we have stated on the weather home
> > page, "Log on to the 1-Wire Interest Group or check the group's
> > archives under the heading "1-Wire Instrument availability" to get
> > references for current suppliers of the WS-1...".
> >
> > For the time being that source is Texas Weather Instruments, Inc.
> >
> > Regards,
> >
> > Dan Awtrey   Staff Engineer
> > Dallas Semiconductor   Phone: 972-371-6297
> > Building C   FAX: 972-371-3715
> > 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> > Dallas, TX 75244-3292
> > http://www.ibutton.com
> >
> >
> > -----Original Message-----
> > From: ATVQ [mailto:atvq@hampubs.com]
> > Sent: Tuesday, July 25, 2000 9:05 AM
> > To: Charles Bennett; weather@ibutton.com
> > Subject: Re: [weather] Weather Station Plastic Molds.. Who makes them?

> >
> >
> > I could be wrong, but I think I remember that someone was making the
> > plastic
> > parts for Dallas as a favor, and the quantity was to be limited as it
> > was a
> > promo. What we need to remember is that the mold for the plastic parts
> > could
> > easily cost from $150,000 to $250,000. We go through this type of
> > thing
> > where I work - therefore some great ideas never happen due to the cost
> > of
> > the mold. Just think of the number that has to be sold to recover the
> > expense that is put out before the product even becomes a reality. I
> > would
> > love to know the source of the plastic parts, but I'm willing to bet
> > that it
> > is Texas Weather. And while I would not have paid the price that they
> > are
> > asking for a weather station, I can not fault them for making a
> > profit, a
> > profit that might very well be realistic for the total quantity that
> > is
> > expected to be sold.
> >
> > I suggest, that for those that still want to have a system, to put on
> > those
> > creative hats, and figure out how to do it with out those parts. Use
> > materials that you might be able to purchase at the local hardware
> > store,
> > PLUS DALLAS PARTS, of course. Dallas has taught us how to do it
> > electrically, we just need to be creative to figure out how to apply
> > that
> > knowledge to a different set of hardware.
> >
> > And, if there are those that take up the challenge, I would be
> > interested in
> > publishing an article(s) on how you accomplished the project. While
> > the
> > magazine, Amateur Television Quarterly, may not seem like the place to
> > publish an article like this, we do publish many technical - how to -
> > articles. ATV repeater owners might like to have a weather station at
> > the
> > remote repeater location.
> >
> > Give it a thought. Contact me when you have the article! Good Luck.
> >
> > If anyone on this list would like a FREE sample of ATVQ, drop an email
> > to
> > ATVQ@hampubs.com and just give me you full address. Thanks.
> >
> > Gene Harlan - WB9MMM
> > Harlan Technologies - publisher of
> > OSCAR Satellite Report - OSR@hampubs.com
> > Amateur Television Quarterly - ATVQ@hampubs.com
> > http://www.hampubs.com
> >
> >

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

86. [wxsig] Thermochrons et al.

From: "Brian B. Riley" <brianbr@macconnect.com>
Date: Wed, 26 Jul 2000 08:40:16 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98571-2000.07.26-07.45.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I received my Thermochrons from DalSemi finally. They seem to have been
back ordered or something ... they are neat and the DalSemi software
makes it a snap to set them/read them etc. I want to play some with the
DOS base software though ...

I was wondering about the T238 firmware, has anything been done to be
able to 'remove' the rain gauge yet. I know it is still summer, but

unfortunately time is moving on, I would like to be able to check that
out well before I have to pull it off when Ole Man Winter is breathing
hard down my neck.

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

87. [wxsig] Other weather station

From: William Beals <will@beals5.com>
Date: Wed, 26 Jul 2000 20:22:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98696-2000.07.26-22.11.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Russ: Looks like you are not alone in your persuit of an alternate to the
Dallas weather station. While Dallas appears to be out of the business,
hopefully there will be other options soon and hopefully not any more
expensive than the Dallas solution. I like the idea of a homebrew slution
too, lots of options for any budget. Regrettably I suspect that not all of
these will have the same calibration constants for things like wind speed
but I'll find a way of handling that in firmware somehow.

Steve: Thanks for the docs in PDF. It looks like most of my blue stuff
didn't make it through the translation, but it is out now, so we'll leave
it as-is. I'll put the PDF versions on the website hopefully tonight.

Brian: I don't have the rain-guage removal support in place yet. Good
news is that with the guage removed the only practical thing that is
different is the error counter will increment every 5 seconds. I default
to all 0's for readings when no sensor is present. Adding this support is
on my list though.

Brian: Those thermochrons are fun. I convinced my boss to order 10 for
work stuff and they have proved handy several times.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

88. [wxsig] T-238 Status 7/27/00

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Thu, 27 Jul 2000 10:35:20 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98779-2000.07.27-09.40.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The T-238 kits have arrived at the TAPR office. Pre-orders are starting to
be filled now.

Due to Dallas Semiconductor discontinuing the 1-Wire(tm) Weather Station
(see Important Notice below), only 100 T-238 kits will be produced.
Additional kits may be produced depending on demand.

The Assembly and Operations manuals are now available at

http://www.beals5.com/wx

or

ftp://ftp.tapr.org/wxsig/docs/

A printed assembly manual will accompany the kit. You will need to download the operations manual from one of the two web sites. It will constantly be updated, so check for the latest release.

- Steve, N7HPR
n7hpr@tapr.org

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

89. [wxsig] Dallas 1- Wire WX Station Available

From: Gregory Beat <gregory.beat@mediaone.net>
Date: Thu, 27 Jul 2000 10:12:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98788-2000.07.27-10.19.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Last month, I purchased the Dallas Semiconductor 1-Wire Weather Station, along with the 1-Wire Rain Gauge. Outside of opening the boxes to examine the contents, I have not assembled these units.

Due to change in my work / travel schedule, I have to placed on hold my immediate plans for this system. Since Dallas has discontinued the base 1-Wire Weather Station, I would be happy to sell these units what I have paid, plus shipping.

If anyone is interested in purchasing both of these units (as a pair), please email me
privately at w9gb@arrl.net

G. Beat
w9gb

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

90. [wxsig] WS-1

From: Mike Young <myoung@neo.rr.com>
Date: Thu, 27 Jul 2000 11:34:41 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98794-2000.07.27-10.39.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a un-used Dallas WS-1 that I no longer need and would sell for what I have in it plus shipping.

Please reply directly to myoung@neo.rr.com

Thanks,

Mike, WB8CXO

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

91. [wxsig] Re: Dallas 1- Wire WX Station Available

From: Anson Mount <amount@execpc.com>
Date: Thu, 27 Jul 2000 10:47:56 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98795-2000.07.27-10.53.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gregory,

Do you still have these two units? What is the total sale price if you do?

Thanks!

Anson Mount / n9rjx

Gregory Beat wrote:

> Last month, I purchased the Dallas Semiconductor 1-Wire Weather
> Station, along with the 1-Wire Rain Gauge. Outside of opening the boxes
> to examine the contents, I have not assembled these units.
>
> Due to change in my work / travel schedule, I have to placed on hold my
> immediate plans for this system. Since Dallas has discontinued the base
> 1-Wire Weather Station, I would be happy to sell these units what I have
> paid, plus shipping.
>
> If anyone is interested in purchasing both of these units (as a pair),
> please email me
> privately at w9gb@arrl.net
>
> G. Beat
> w9gb
>
> ---
> You are currently subscribed to wxsig as: amount@execpc.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

92. [wxsig] Re: Dallas 1- Wire WX Station Available

From: Anson Mount <amount@execpc.com>
Date: Thu, 27 Jul 2000 10:51:13 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98796-2000.07.27-10.56.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry about the reply over the reflector...breach of protocol!

Anson

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

93. [wxsig] Re: Dallas 1- Wire WX Station Available

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Thu, 27 Jul 2000 11:08:08 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98801-2000.07.27-11.11.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes, very interested, if you haven't already sold them. I can do PayPal or
any other arrangement that suits.

Rich Beckwith Wn0x,
-----Original Message-----
From: Gregory Beat <gregory.beat@mediaone.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Thursday, July 27, 2000 10:14 AM
Subject: [wxsig] Dallas 1- Wire WX Station Available

>Last month, I purchased the Dallas Semiconductor 1-Wire Weather
>Station, along with the 1-Wire Rain Gauge. Outside of opening the boxes
>to examine the contents, I have not assembled these units.
>
>Due to change in my work / travel schedule, I have to placed on hold my
>immediate plans for this system. Since Dallas has discontinued the base
>1-Wire Weather Station, I would be happy to sell these units what I have
>paid, plus shipping.
>
>If anyone is interested in purchasing both of these units (as a pair),
>please email me

>privately at w9gb@arrl.net
>
>G. Beat
>w9gb
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

94. [wxsig] Re: Dallas 1- Wire WX Station Available

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Thu, 27 Jul 2000 11:10:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98802-2000.07.27-11.13.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry guys, didn't mean to respond to the reflector.

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

95. [wxsig] RE: Dallas 1- Wire WX Station Available

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 27 Jul 2000 13:22:14 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98814-2000.07.27-12.27.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How much do you want total. I will get a check off ASAP.

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Gregory Beat
> Sent: Thursday, July 27, 2000 11:12 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Dallas 1- Wire WX Station Available
>
>
> Last month, I purchased the Dallas Semiconductor 1-Wire Weather
> Station, along with the 1-Wire Rain Gauge. Outside of opening
> the boxes
> to examine the contents, I have not assembled these units.
>
> Due to change in my work / travel schedule, I have to placed
> on hold my
> immediate plans for this system. Since Dallas has
> discontinued the base
> 1-Wire Weather Station, I would be happy to sell these units
> what I have
> paid, plus shipping.
>
> If anyone is interested in purchasing both of these units (as a pair),
> please email me
> privately at w9gb@arrl.net
>
> G. Beat
> w9gb
>

>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

96. [wxsig] Coming in CC#122

From: "Steven R. Bible" <srbible@gate.net>
Date: Thu, 27 Jul 2000 15:12:13 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-98829-2000.07.27-14.17.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just received my Aug Circuit Cellar magazine. And on the preview of next
issue page there is mention of "A Low-Cost Weather Station."   Hmmm. Got to
wait another month. Dang.

 - Steve, N7HPR
   n7hpr@tapr.org

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

97. [wxsig] Re: Auto Wx Discussion Group

From: "LaPorteCounty Skywarn - N9ZIP" <lapcoskywarn@home.com>
Date: Sat, 29 Jul 2000 12:2:53
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99161-2000.07.29-12.08.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm the new kid on the block. :) Thanks for starting APRS Weather
Discussions
here.

73's
Ken N9ZIP

On 07/24/00, ""Dale Huguley" <kg5qd@earthlink.net>" wrote:
> Hi All-
>   I have a need to discuss automatic NWS aprs weather stuff and spoke to
> Steve Dimse at Dayton about it. He suggested doing it here on the wxsig.
> However I have watched the discussions for two months or so and see nothing
> outside of messages concerning the T-238. I would rather not muddy the
> waters and cause your delete keys to wear out prematurely. It would be easy
> enough to set up a discussion group on another system. Let me know the
> group attitude.
>
> 73 de kg5qd Dale

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

98. [wxsig] Re: Auto Wx Discussion Group

From: William Beals <will@beals5.com>
Date: Sat, 29 Jul 2000 11:23:10 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99166-2000.07.29-12.24.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Welcome Ken:

The idea of having data useful enough for NWS sounds pretty neat. One of
the main reasons I got involved in this project is that I wanted to get
some weather data from remote mountain places where no-one else bothers to
have weather stations. Even if they did, they are places where power and
telephone access (to get the data out) don't exist! Perfect application
for APRS.

will

-----Original Message-----
From: LaPorteCounty Skywarn - N9ZIP [SMTP:lapcoskywarn@home.com]
Sent: Friday, July 28, 2000 7:01 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Auto Wx Discussion Group

I'm the new kid on the block. :) Thanks for starting APRS Weather
Discussions
here.

73's
Ken N9ZIP

On 07/24/00, ""Dale Huguley" <kg5qd@earthlink.net>" wrote:
> Hi All-
> I have a need to discuss automatic NWS aprs weather stuff and spoke
to
> Steve Dimse at Dayton about it. He suggested doing it here on the wxsig.
> However I have watched the discussions for two months or so and see
nothing
> outside of messages concerning the T-238. I would rather not muddy the
> waters and cause your delete keys to wear out prematurely. It would be
easy
> enough to set up a discussion group on another system. Let me know the
> group attitude.
>
> 73 de kg5qd Dale

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(A,1`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`I````4D4Z(%MW>'-I
M9UT@4F4Z($%U=&\@5W@@1&ES8W5S<VEO;B!'<F]U< `%#@$%@ ,`#@```- '
M!P`=``L`%P`*``8`+0$!(( #``X```#0!P<``0`+`!4`#P`&`# !`0F `0`A
M````-T8T0D4V-40S-C8U1#0Q,4$X-38P,# P13@Y0C-#,#D`$ <!`Y &`'P(
M```A````"P`"``$````+`",```````,`)@``````"P`I```````#`"X``````
M``,`-@``````0 `Y`,!M%ZN!^;\!'@!P``$````I````4D4Z(%MW>'-I9UT@
M4F4Z($%U=&\@5W@@1&ES8W5S<VEO;B!'<F]U< `````"`7$``0```!8````!
MO_F!JPY=YDN 9381U*A6``#HFSP)```>`!X,`0````4```!33510`````!X`
M'PP!````$ ````'=I;&Q 8F5A;',U+F-O;0`#``80_CINV@,`!Q!E! ``'@`(
M$ $```!E````5T5,0T]-14M%3CI42$5)1$5!3T9(059)3D=$051!55-%1E5,
M14Y/54=(1D]23E=34T]53D134%)%5%193D5!5$].14]&5$A%34%)3E)%05-/
M3E-)1T]424Y63TQ6141)3E1(20`````"`0D0`0```%0%``!0!0``?0<``$Q:
M1G4RX/7U/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]
M$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@0&YG,3 S
M,PNF()A796P%H > ($L)\$XZ"J(*A J 5&@74&G!`0!A(&]F( ]P%'"1%@`@
M9&$!D"!U#Z <9G4#( GP"&!G:"#3`A %P$Y7!?!S"& 4T(<$(!$P#[!T>2!N
M&-!@="X@($\<,!CR=-<8@0# "X @"7!A&U &,;!)(&=O!4 +@'8&\#YV"8 >
M<1T!! `;L6]JOP60'F$$(!T0&; >$7<`</)T'N%T;QXP#[ ;01=!_G<<01B
M!< 9HP-2'9$$8+\@X!U &V$!D!UQ"U%C!Y'N=R(A%U :<"T"(!=0%P#]#Z @
M!N B$B A(3 9,2'(LG,!D'1I'>$<<$4>T*\#H :0'0(<$&08L"PH).<*P!=0
M) MP;R'@!< `<.,A`1<`97!H)0(`T"0Q/00@*"$E'1(9HPA@="E+&9 "("<%
M0&5X! !T*B$<@% $D&8?TF%P&0M0:6,G,QK#05!2[%,N%[H#\&P)4!?)"O3Y
M+M S-@% %: !0!^1(.!#'^ 0=#$V("TSLD^]!1!G"X '0 70*Z%A(5 _,[,7
MMC+$,I$+$S+&:2T8,30T`4 NT#$X,,<!0 S0-U-B($8#81>@10R28@_03&%0
M"1%EQPA1`C <$%-K>2"P!*$"+0>P.5I)4"!;H%--5% Z"V!P!:!:<SID0"L@
M!X N%R%=?Q>U.( &8 (P..<XH!BP89IY*+!*&C <$#(X*+"#`= WX" W.C Q
M+A#233T75&\XYU0OH1;@^E@&`' %D <Q'A @T0EP22<0($<#8'5P/1AU1F(?
MPCCG6W=X`)!G<ET'\&4Z#^ M`"$P5^AX($0$`&,9\ "0+S$_0QHUSS+C,A0+
MMA?#22?_(N =$APP!^ 4L![P+S$=$M$"8&]C:QQP.BT@&'#]``!K!" :TB<1
M`" 98B^B_Q;A(@07M$8X#S 7PR2"+^OX-S,G3U47<3KD%[H<H( @,#<O,C0O
M-^"Q*+ B(D0'0!=02!J0`QHP*% B(#QK9S78<61 &- `(&@NT$QPTBX<,'0^
```

```
M5'!W,L(7I?H^4_!I#^ PT#5%5L!7PO\>("9#&. <,"#T*(!&4RD0]T7!`, G
M0&,;`RZ@)>$FF-9U`2 J@W,J,&L74"$@W59F4R#@)F%&,&TE82!A_5.P>2$@
M`Z !H"SQ&* <8OI(%U!S&I A4"<0'N$M0/\98EZP&2 DDDLU10,OY5;!WRI!
M'M %P%@5(+!T#V @\N<L<D[(&L-T=R$P!& "./YH!"!,PB$P6[,)X"3!'T'_
M%@!69BSQ`) !`!CR!X$TPGL$( 6@;B0P!* 98AT25' M,C,X''$@D0A@;!T>
M\'(B!&9!'4!U9&3_'! =$59F8O$ETBJ2+O 9\7P@>0AA&9 JX2-!7"!Y_R7S
M(>$%P%YR&\%9X0AP%P!N>6FR!4!J!&(E(1W >?]69AIE(2$/H1R 0T!8<6.X
M_QXP0R)+(@!P):,;0&X0(.#:;1QQ3"%A%T%K&G 'X/]K>7-4&; G0%M@`0!A
M=U9F_U#0;7%*X%2R7=$J\!>Z-2?N60A@*1-&8'()< (P/Q%]7S!B!/)P<"$#
M10,I$'-=19!W!M 8T"500!<A</T9\7(>T#S"&!4A,!MP>\?_9?$JH1C@`F!,
M81I0'5$#(#<A(2KP)E$M10,W0#4W^5+P34 NT"<0)X !D!$P7BX%L&:E%[H1
M\0"$P ,`$! ``````P`1$ `````#`( 0_____T `!S"@'[MF@?F_`4 `"#"@
M'[MF@?F_`0L``( (( 8``````, ```````!&``````.%`````````P`"@ @@
M!@``````P ```````$8`````$(4````````#``6 "" &``````# ````````
M1@````!2A0``MPT```,`"8 (( 8``````, ```````!&``````&%````````
M'@`B@ @@!@``````P ```````$8`````5(4```$````$````."XP``L`)H (
M( 8``````, ```````!&``````Z%`````````P`G@ @@!@``````P ``````
M`$8````$84````````#`"F "" &``````# ````````1@`````8A0``````
M`!X`.( (( 8``````, ```````!&`````#:%```!``````0`````````>`#F
M"" &``````# ````````1@`````WA0```0````$`````````'@`Z@ @@!@``
M````P ```````$8`````.(4```$````!`````````!X`/0`!````!0```%)%
0.B ``````P`--/TW``!K,H4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

99. [wxsig] NWS Special Statements

```
From: "LaPorteCounty Skywarn - N9ZIP" <lapcoskywarn@home.com>
Date: Sat, 29 Jul 2000 13:22:42
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99175-2000.07.29-13.28.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Can Special Statements be IGATED? I get them E-Mailed to me, but I don't
see them on APRS. I think they are under NOWFWA?

Thanks
Ken N9ZIP
LaPorte County SKYWARN

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

100. [wxsig] Re: NWS Special Statements

```
From: "Mark A. Foley" <na4v@hom.net>
Date: Sat, 29 Jul 2000 14:26:36 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99176-2000.07.29-13.32.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Yes they can....your igate provider has to configure the SVR statements for
your area....Dale's homepage has the information
Mark, NA4V
-----Original Message-----
From: LaPorteCounty Skywarn - N9ZIP <lapcoskywarn@home.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Saturday, July 29, 2000 2:21 PM
Subject: [wxsig] NWS Special Statements

>Can Special Statements be IGATED? I get them E-Mailed to me, but I don't
>see them on APRS. I think they are under NOWFWA?
>
>Thanks
>Ken N9ZIP
>LaPorte County SKYWARN
>
>
>---
>You are currently subscribed to wxsig as: na4v@hom.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

101. [wxsig] Re: NWS Special Statements

From: "LaPorte County Skywarn" <lapcoskywarn@home.com>
Date: Sat, 29 Jul 2000 13:32:43 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99178-2000.07.29-13.39.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am the IGATE OP?

----- Original Message -----
From: Mark A. Foley <na4v@hom.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Saturday, July 29, 2000 1:26 PM
Subject: [wxsig] Re: NWS Special Statements

> Yes they can....your igate provider has to configure the SVR statements
for
> your area....Dale's homepage has the information
> Mark, NA4V
> -----Original Message-----
> From: LaPorteCounty Skywarn - N9ZIP <lapcoskywarn@home.com>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Date: Saturday, July 29, 2000 2:21 PM
> Subject: [wxsig] NWS Special Statements
>
>
> >Can Special Statements be IGATED? I get them E-Mailed to me, but I don't
> >see them on APRS. I think they are under NOWFWA?
> >
> >Thanks
> >Ken N9ZIP
> >LaPorte County SKYWARN
> >
> >
> >---
> >You are currently subscribed to wxsig as: na4v@hom.net
> >To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: lapcoskywarn@home.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

102. [wxsig] Re: NWS Special Statements

From: "Mark A. Foley" <na4v@hom.net>
Date: Sat, 29 Jul 2000 14:40:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99181-2000.07.29-13.46.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

go to: http://kg5qd.home.att.net/I_gate.html

it has all the info for configuring your igate....
Mark, NA4V
-----Original Message-----
From: LaPorte County Skywarn <lapcoskywarn@home.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Saturday, July 29, 2000 2:32 PM
Subject: [wxsig] Re: NWS Special Statements

>I am the IGATE OP?
>
>
>----- Original Message -----
>From: Mark A. Foley <na4v@hom.net>
>To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
>Sent: Saturday, July 29, 2000 1:26 PM
>Subject: [wxsig] Re: NWS Special Statements
>
>
>> Yes they can....your igate provider has to configure the SVR statements
>for
>> your area....Dale's homepage has the information
>> Mark, NA4V
>> -----Original Message-----
>> From: LaPorteCounty Skywarn - N9ZIP <lapcoskywarn@home.com>
>> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
>> Date: Saturday, July 29, 2000 2:21 PM
>> Subject: [wxsig] NWS Special Statements
>>
>>
>> >Can Special Statements be IGATED? I get them E-Mailed to me, but I
don't
>> >see them on APRS. I think they are under NOWFWA?
>> >
>> >Thanks
>> >Ken N9ZIP
>> >LaPorte County SKYWARN
>> >
>> >
>> >---
>> >You are currently subscribed to wxsig as: na4v@hom.net
>> >To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>> >
>> >
>> >
>>
>>
>> ---
>> You are currently subscribed to wxsig as: lapcoskywarn@home.com
>> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>>
>
>
>---
>You are currently subscribed to wxsig as: na4v@hom.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

103. [wxsig] Re: NWS Special Statements

From: "LaPorte County Skywarn" <lapcoskywarn@home.com>
Date: Sat, 29 Jul 2000 13:47:02 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99182-2000.07.29-13.53.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lets repharse the question.
NOWFWA is in the Stations.txt but the are not appearing in APRS. If they
don't appear, I cann't send them.

I was inquiring if NOW's are being sent over APRS.

Ken

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

104. [wxsig] Re: NWS Special Statements

From: "KF4HJW:Darrell" <kf4hjw@home.com>
Date: Sat, 29 Jul 2000 16:45:33 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99237-2000.07.29-15.50.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you see the NOW messages onyour message list then they are coming out and
you can resend them.

Just as a reminder I forgot to put in caps and also remember the TABS
between items These are easy mistakes to make for sure

good luck

PACKET ADDRESS
KF4HJW@KF4HJW.#TIDE.VA.US.NOAM
WWW.QSL.NET/KF4HJW
VISIT www.qsl.net/eva Eastern VA APRS Group
SIGN UP FOR VA AREA APRS NEWS
Subscribe: N4EVA-subscribe@egroups.com
VISIT WWW.ARESVA.ORG FOR THE LATEST ARES/RACES NEWS

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

105. [wxsig] Re: NWS Special Statements

From: Guy Story <kc5goi@tapr.org>
Date: Sat, 29 Jul 2000 22:37:28 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99287-2000.07.29-22.42.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ken, what is the distance you have in the Afilter config, if Dales wx
parser station is out of your range, that will keep you from sending the
wx data as well. Make sure all entries are in caps too.

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

106. [wxsig] Re: NWS Special Statements

From: "Dale Huguley" <kg5qd@earthlink.net>
Date: Sun, 30 Jul 2000 10:11:41 -0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99340-2000.07.30-05.21.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Ken and all-

> Can Special Statements be IGATED? I get them E-Mailed to me, but I don't
> see them on APRS. I think they are under NOWFWA?
>
If you mean a severe weather statement - it should be "IWXSVS" for your
area - I parse the header- which tells you there is a statement - but
nothing else- The trouble is that you can have a 15 line severe statement
coming out telling you that such and such strom has weakened- and gets in
the way of a tornado warning. At higher bandwidth than 1200 baud this is
not a problem.

Some weather service offices use the SVS to update tornado and severe
thunderstorm positions- I make an attempt to parse those with some success.

73 de kg5qd Dale

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

107. [wxsig] The Phoenix Project??

From: Robert W Burton <kd4ydc@juno.com>
Date: Sun, 30 Jul 2000 07:00:12 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99347-2000.07.30-06.09.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Once upon a time there was a test project call Phoenix Project based out
of the Tallahassee NWS office. They took info from APRS wx stations and
ported it back into AWIPS at the local NWS office. I found from our
local SKYWARN sig, info on this but can't find anything further. Anyone
know anything on this?   APRS to AWIPS.....anyone doing this?
Thanks,
Robert
KD4YDC

_____
YOU'RE PAYING TOO MUCH FOR THE INTERNET!
Juno now offers FREE Internet Access!
Try it today - there's no risk! For your FREE software, visit:
http://dl.www.juno.com/get/tagj.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

108. [wxsig] Re: NWS Special Statements

From: "LaPorte County Skywarn" <lapcoskywarn@home.com>
Date: Sat, 29 Jul 2000 19:05:32 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99348-2000.07.30-06.51.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

That's just it, we don't see them coming over.

> If you see the NOW messages onyour message list then they are coming out
and
> you can resend them.
>
> Just as a reminder I forgot to put in caps and also remember the TABS
> between items These are easy mistakes to make for sure
>
> good luck
>
>
>   PACKET ADDRESS
> KF4HJW@KF4HJW.#TIDE.VA.US.NOAM
>   WWW.QSL.NET/KF4HJW
> VISIT www.qsl.net/eva Eastern VA APRS Group
>   SIGN UP FOR VA AREA APRS NEWS
> Subscribe: N4EVA-subscribe@egroups.com
> VISIT WWW.ARESVA.ORG FOR THE LATEST ARES/RACES NEWS
>
>
>
> ---
> You are currently subscribed to wxsig as: lapcoskywarn@home.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

109. [wxsig] 1-Wire wx station for sale

From: Paul Womble <pwomble1@tampabay.rr.com>
Date: Sun, 30 Jul 2000 10:51:17 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99364-2000.07.30-09.57.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For sale:

1-Wire weather station with rain guage.
Wx station is assembled but not sealed. Works 100%.
Rain guage has been assembled but not calibrated or connected to the
network.

$135.00 shipped in the CONUS

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

110. [wxsig] Re: Auto Wx Discussion Group

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sun, 30 Jul 2000 10:49:37 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99374-2000.07.30-10.55.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
>
> Welcome Ken:
>
> The idea of having data useful enough for NWS sounds pretty neat. One of
> the main reasons I got involved in this project is that I wanted to get
> some weather data from remote mountain places where no-one else bothers to
> have weather stations. Even if they did, they are places where power and
> telephone access (to get the data out) don't exist! Perfect application
> for APRS.

One concept I'm working on is to make a ham (APRS) and airport-based
mesoscale network of data available to anyone who's interested. Using
the airports allows densification of the network; using the ham stations
allows, especially, densification of the data withing urban areas.

I'm thinking of prototyping a system based on aprsd that would snag wx
stations only from the main servers, and not accept anything from
"regular" aprs tracking stations. A seperate module, probably in Perl,
since one exists for IDD (UCAR wx data distro) to snag the METARs from
the US airports, reformat them to APRS "other/unknown" format, and push
'em to the wx server.

Obviously, a different connection port than 10151/10152 is going to be
needed, and on top of that, since there's no tracking, for most folks
this will be almost as exciting as watching paint dry.

Mesonets are gaining popularity in the professional meteorology
community (help me here, Dale) to get "nowcast" data on events, and
provide short-range forcasts to communities in the path of severe
weather based on nowcasting. Oklahoma has a pretty dense network
(http://okmesonet.ocs.ou.edu/) and Texas is proposing one (URL's down by
all appearances but here it is:
http://www.met.tamu.edu/texnet/mesonet.html).

There's also a fair bit of GPS work going into this, verifying and
quantifying precipitable water vapor around the mesonet sites using
tropospheric delay between L1 & L2.

This idea is still embryonic, but I think it's got some promise. Anyone
care to comment?

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

111. [wxsig] 1 Wire wx station sold

From: Paul Womble <pwomble1@tampabay.rr.com>
Date: Sun, 30 Jul 2000 11:53:02 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99375-2000.07.30-10.58.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Didnt last long. Wish I had more of them!!!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

112. [wxsig] Re: Auto Wx Discussion Group

From: "LaPorte County Skywarn" <lapcoskywarn@home.com>
Date: Sun, 30 Jul 2000 11:06:31 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99378-2000.07.30-11.12.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Wow, when you take on a project, you really take one on. The NWS office in
our area is really trying to push APRS.
Because of our distance, and being in a low area (hole in the earth), we
can't hear them, and they can't hear us. That's why I opened and IGATE. To
get the messges out. The more products we can offer, the more they will be
used. Not only hams use APRS, our EMA office monitors our Skywarn Nets and
APRS to have more detailed information. They are the ones who sound the
sirens during major events. So as our product range increases, so will the
users.

Remember the FCC defines Amateur Radio as a "Service". and that's what we
are trying to do.

73's Ken
N9ZIP

----- Original Message -----
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Sunday, July 30, 2000 10:49 AM
Subject: [wxsig] Re: Auto Wx Discussion Group

> William Beals wrote:
> >
> > Welcome Ken:
> >
> > The idea of having data useful enough for NWS sounds pretty neat. One
of
> > the main reasons I got involved in this project is that I wanted to get
> > some weather data from remote mountain places where no-one else bothers
to
> > have weather stations. Even if they did, they are places where power and
> > telephone access (to get the data out) don't exist! Perfect application
> > for APRS.
>
> One concept I'm working on is to make a ham (APRS) and airport-based
> mesoscale network of data available to anyone who's interested. Using
> the airports allows densification of the network; using the ham stations
> allows, especially, densification of the data withing urban areas.
>
> I'm thinking of prototyping a system based on aprsd that would snag wx
> stations only from the main servers, and not accept anything from
> "regular" aprs tracking stations. A seperate module, probably in Perl,
> since one exists for IDD (UCAR wx data distro) to snag the METARs from
> the US airports, reformat them to APRS "other/unknown" format, and push
> 'em to the wx server.
>
> Obviously, a different connection port than 10151/10152 is going to be
> needed, and on top of that, since there's no tracking, for most folks
> this will be almost as exciting as watching paint dry.
>
> Mesonets are gaining popularity in the professional meteorology
> community (help me here, Dale) to get "nowcast" data on events, and
> provide short-range forcasts to communities in the path of severe
> weather based on nowcasting. Oklahoma has a pretty dense network
> (http://okmesonet.ocs.ou.edu/) and Texas is proposing one (URL's down by

> all appearances but here it is:
> http://www.met.tamu.edu/texnet/mesonet.html).
>
> There's also a fair bit of GPS work going into this, verifying and
> quantifying precipitable water vapor around the mesonet sites using
> tropospheric delay between L1 & L2.
>
> This idea is still embryonic, but I think it's got some promise. Anyone
> care to comment?
>
> 73, gerry n5jxs
> --
> Gerry Creager gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
> Network Engineering |Research focusing on
> Computer Science Department |Satellite Geodesy and
> Texas A&M University |Geodetic Control
> 979.458.4020 (Phone) -- 979.847.8578 (Fax)
>
> ---
> You are currently subscribed to wxsig as: lapcoskywarn@home.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

113. [wxsig] Integrated Data

From: William Beals <will@beals5.com>
Date: Sun, 30 Jul 2000 18:01:11 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99500-2000.07.30-20.25.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ken:

Looks like you are getting pretty seriously into integrating a lot of data!
 I fly a little airplane, so I am very used togetting the TAFs as well as
the AWOS/ASOS data. Just as in repeaters for voice, I like amateur radio
as it is cheap enough that individuals can participate and do a great job
of filling in areas that all the government and commercial interests deem
too small to mess with. Here in Colorado, you can get all the cell
phone/weather/whatever services you want along the front range. Outside
that the population is too sparse to justify much commercial
infrastructure. Ham radio does a wonderful job of providing voice and
digital communcations where indiviual enthusiasts can afford it.

I sorta understood most of what you were talking about, but got lost near
the end. I guess the idea is to have lots of raw data being pumped into a
system so that you can to small-scale predictions if that small area
happens to get hit with something big and nastly like a tornado.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

114. [wxsig] Re: 1-Wire wx station for sale

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sun, 30 Jul 2000 20:34:11 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99501-2000.07.30-20.42.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm interested if it is still available.

Rich Beckwith Wn0x

----- Original Message -----
From: Paul Womble <pwomble1@tampabay.rr.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Sunday, July 30, 2000 9:51 AM
Subject: [wxsig] 1-Wire wx station for sale

>
> For sale:
>
> 1-Wire weather station with rain guage.
> Wx station is assembled but not sealed. Works 100%.
> Rain guage has been assembled but not calibrated or connected to the
> network.
>
> $135.00 shipped in the CONUS
>
>
>
>
> ---
> You are currently subscribed to wxsig as: wn0x@earthlink.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

August 2000

Original source file: wxsig.0008
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0008

1. [wxsig] T238 Built!

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Tue, 1 Aug 2000 07:03:31 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99797-2000.08.01-07.11.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Finished construction at 12:30 this morning! Will configure and hook up to
my wx station tonight.

Future constructors might consider leaving the lead of R13 closest to J8
uncut, insulate it with heat shrink, then folding it over and soldering to
J8 to repair the bad trace.

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] Re: T238 Built!

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 1 Aug 2000 07:03:25 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99804-2000.08.01-08.08.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
Subject: [wxsig] T238 Built!

>
> Future constructors might consider leaving the lead of R13 closest to J8
> uncut, insulate it with heat shrink, then folding it over and soldering to
> J8 to repair the bad trace.
>

This is an excellent suggestion for T238 kit builders!

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] T238 on the Air!

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Tue, 1 Aug 2000 21:59:04 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99945-2000.08.01-22.07.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The WN0X-3 1-Wire Weather Station is on the Air!
http://www.findu.com/cgi-bin/wxpage.cgi?WN0X-3

The only problem is that I missed the opportunity to set my Lat/Long and
don't know what to do now to get the info back into the T238. Can you help
Will?

Constuction went very smooth other than having to pull a couple of
components I stuffed in the wrong holes. No problem following the
instructions and I had the kit done in about 2.5 hours.   Pre-flight testing
instructions were extensive so no magic smoke got out anywhere. Set up with
the 1-Wire WX station was a breeze, although I had to turn the wind
direction sensor with the end of a broom stick since everything is already
installed on the pole! My junction box below the station uses standard
phone jacks, which makes removing sensors and testing easy. Powered the
T238 with a 9V battery, crawled up onto the roof of the barn and plugged in
to set everything up. No problems!

T238 Display http://home.earthlink.net/~wn0x/t238display.jpg
T238 Project http://home.earthlink.net/~wn0x/t238project.jpg

Thanks for a great project Will. My best to your development group.

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] Re: T238 Built!

From: William Beals <will@beals5.com>
Date: Tue, 1 Aug 2000 21:24:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99948-2000.08.01-23.23.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ/Rich:

I must confess that I cheated in a similar manner on using the resistor lead for the jumper, but opted not to confess my transgression. I felt it was cheating a bit as the wire ended up not being insulated. If no-one has any concern about that, then I guess it is an OK alternate to the official rework.

will

-----Original Message-----
From: Russ Chadwick [SMTP:crb5@uswest.net]
Sent: Tuesday, August 01, 2000 7:03 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: T238 Built!

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
Subject: [wxsig] T238 Built!

>
> Future constructors might consider leaving the lead of R13 closest to J8
> uncut, insulate it with heat shrink, then folding it over and soldering
to
> J8 to repair the bad trace.
>

This is an excellent suggestion for T238 kit builders!

Russ
kb0tvj

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(A $`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`<````4D4Z(%MW>'-I
M9UT@4F4Z(%0R,S@@0G5I;'0A`#X(`06 `P`.````T <(``$`%0`8`"(``@`Q
M`0$@@ ,`#@```- '" `!`!4`"@`4``(`%0$!"8 !`"$```!#149"-3!&-T1$
```

```
M-C=$-#$Q03@U-C P,#!%.#E",T,P.0`\!P$#D 8`* <``"$````+``(``0``
M``L`(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`
MX(+0+3'\OP$>`' ``0```!P```!213H@6W=X<VEG72!293H@5#(S."!"=6EL
M="$``@%Q``$````6`````;_\,2W0]U#[SV?=$=2H5@``Z)L\"0```'@`>#  $`
M```%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&
M$!=ST%$#``<0) ,``!X`"! !````90```%)54U,O4DE#2#I)35535$-/3D9%
M4U-42$%424-(14%4141)3D%324U)3$%234%.3D523TY54TE.1U1(15)%4TE3
M5$]23$5!1$9/4E1(14I535!%4BQ"551/4%1%1$Y/5%1/0T\``````@$)$ $`
M```.! ``"@0``-(%``!,6D9U]US;*#\`"@$#`?<"I /C`@!C:,$*P'-E=# @
M!Q,"@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@
M8P!0"P-C`$$+8,!N9S$P,S,+I@?PHG4$$"]2:0]@.@JBXPJ$"H!)(&T7``5
M!:#L;F8'D 0@= ]P!4 84"T/8&498 F ( N (&&Z( "0;0,0"L$#@6X$D%H@
M`B @%P`+@&<9,67>( EP`) 8D 6Q;!G0&A"'`A %P!P":G5M< 20T"P@8G4%
M0&\%,!H!G&YO!4 <D!BW;7D9,"YR`'$)P000:0(@+B K&8$8\&P%0&D%0'=A
M[P0@&;,;PAI@8B%1(9$<`CL#\ EP( GP`0`:$'5PF1ZS8F4;P@N <W4+8.L9
M\2"R9AZQ+0(@'" /<.\$( !P'\ 8P6,$D@&@"&"_'N$941X`' $#H!A09PI0
MCP01(5$$`"8Q($]+&E#?(2 $D1GA'O(<`F\!(!=0RP<Q'#%W!;!K+A>:`_ .
M; E0%ZD*]&QI,S:_`4 5H % $3 >T 60=!!T4#$V("TO(D\%$&>+"X JP4T9
M`6%G92\C'Q>6+C0N`0L3+C9I+3&,-#0!0"V ,3@P`4#C#- RPV(@1@-A%X ,
MDE)B%M0@0P]P9 /P8P!K(%M33510.E$%`&(U0!<`=P>0=/(N&S!T71>5,_ &
M8 (P13175"A!9&%Y'@!!YG4H,!B1,#$>```0,U!8(#<Z%C /X$TW)U0";S?X
M05!2(%=8=P8`'= JHTD", 20-J$@CD<#8"/0-RAU8FHN89$T5UMW> "09UT'
M\ 1E.CAP,C,X($+R=0,0="$PSS':+80+MO\7HPKC"H O(RD0+XTO%!>4WS03
M!_ 744 P!9!K`_ 90,@@/'<*`'A &= `(-IH+8!N*T VX3X7E#XV[S\G/_\7
MFDBE/C0``C (</<<(!C!&)!R%1 <D1^1+Y#^:!BC`) $@1S"%' ;U1S3ZRI@
M!_ Q.D!C"0`/H!B1Z1\!2CA,!G4FH!XP'@#?)*8A0T<R&<(:<&@%$$A LR>E
M`A!L9"1C'D%V&T&[`' :$'-4,09Q&])O3 :_4. >\@EP"K C,!OS8ASQGQ_A
M)K K54BE%Y14:"C!^2C$97@FL"Q -\$:<#D@_S!0&) @@1T32B,4L"0A0%%=
M!(%S2LL6\A>4:S2P=-QV:DK?1 (7E%D(8!I0;TS""' )< (P;!_ ),!B?P3R
M)$!7T1\0/T,BH3_0=^,&T!G0;'- !: =P!<`^P205. N8W%9)1\048!A=]\:
M<"-Q(D(5X36@90# `Q$?'P%.LC!@/T,RL#4W,)@W34 M@!B0<RX!D+41,"X%
ML&<7FA'Q`&H0```#`! 0``````,`$1 ``````P" $/____] ``<PH*00,2_\
MOP% ``@PH*00,2_\OP$+``" "" &`````# ````````1@`````#A0``````
M``,``H (( 8``````, ```````!&`````!"%`````````P`%@ @@!@``````
MP ```````$8`````4H4``+<-```#``F "" &`````# ````````1@`````!
MA0```````!X`(H (( 8``````, ```````!&`````%2%```!````! ```#@N
M, `+`": "" &`````# ````````1@`````.A0````````,`)X (( 8`````
M`, ```````!&`````!&%`````````P`I@ @@!@``````P ```````$8`````
M&(4```````>`#B "" &`````# ````````1@`````VA0```0````$`````
M````'@`Y@ @@!@``````P ```````$8`````-X4```$````!`````````!X`
M.H (( 8``````, ```````!&`````#B%```!`````0`````````>`#T``0``
7``4```!213H@``````,`#33]-P``<+&%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

5. [wxsig] RE: T238 on the Air!

From: William Beals <will@beals5.com>
Date: Tue, 1 Aug 2000 22:32:12 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-99954-2000.08.01-23.38.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Glad things went so smooth! With software rev's of 1.09.0 or later you can enter the position string by cycling through the menus until you see the "position string setup" option. Press select and go from there.

I see there is a position on your weather reports now, so maybe you have already figured this out.

Your comments are appropriately directed to the entire team of which I am just a member.

One happy kit builder taken care of, 50+ to go...

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Tuesday, August 01, 2000 8:59 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] T238 on the Air!

The WN0X-3 1-Wire Weather Station is on the Air!
http://www.findu.com/cgi-bin/wxpage.cgi?WN0X-3

The only problem is that I missed the opportunity to set my Lat/Long and
don't know what to do now to get the info back into the T238. Can you help
Will?

Constuction went very smooth other than having to pull a couple of
components I stuffed in the wrong holes. No problem following the
instructions and I had the kit done in about 2.5 hours. Pre-flight
testing
instructions were extensive so no magic smoke got out anywhere. Set up
with
the 1-Wire WX station was a breeze, although I had to turn the wind
direction sensor with the end of a broom stick since everything is already
installed on the pole! My junction box below the station uses standard
phone jacks, which makes removing sensors and testing easy. Powered the
T238 with a 9V battery, crawled up onto the roof of the barn and plugged in
to set everything up. No problems!

T238 Display http://home.earthlink.net/~wn0x/t238display.jpg
T238 Project http://home.earthlink.net/~wn0x/t238project.jpg

Thanks for a great project Will. My best to your development group.

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(BH$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`=````4D4Z(%MW>'-I
M9UT@5#(S."!O;B!T:&4@06ER(0"G" $%@ ,`#@```- '" `!`!8`( `,``(`
M) $!(( #``X```#0!P@``0`6`!L`*P`"`#X!`0F `0`A````1C!&0C4P1C=$
M1#8W1#0Q,4$X-38P,# P13@Y0C-#,#D`*@<!`Y &`+0)```A````P`"``$`
M```+`",```````,`)@``````"P`I``````#`"X```````,`-@``````0 `Y
M`."YZ Z_+\!'@!P``$````=````4D4Z(%MW>'-I9UT@5#(S."!O;B!T:&4@
M06ER(0`````"`7$``0```!8````!O_PZH.?W4/OQ9]T1U*A6``#HFSP)```>
M`!X,`0````4```!33510`````!X''PP!````$ ```'=I;&Q 8F5A;',U+F-O
M;0`#``80)8F#(P,`!Q @!@``'@`($ $```!E````4DE#2#I'3$%$5$A)3D=3
M5T5.5%-/4TU/3U1(5TE42%-/1E1705)%4D564T]&,3 Y,$]23$%415)93U5#
M04Y%3E1%4E1(15!/4TE424].4U1224Y'0EE#64-,24Y'5$A23U5'2 `````"
M`0D0`0```)4&``"1!@``ZPD``$Q:1G7O6)R]/P`*`0,!]P*D`^,"`&-HP0K
M<V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN
M9-HT#&!C`% +`V,`00M@P&YG,3 S,PNF!_"Z:0]@.@JB"H0*@$<+8%!D('1H
M"X!G!"!WLPGP!4!S;QD`!&!O&%#@(2 @5VD84!D!`8"2=PK 92 )<'8G!"#!
M&C @,2XP.1M0&P!+!< +8'0$D"!Y"& @/F,#D1C1'!$84!J0<&_9`)!T:0(@
M&0!T!1 6`(@@8GD<<'EC;!XB<QA0`V!U9QH`'2('@&[Z=00@=0(P`Q$<0@^@
M&I"-'2(B'6X/H75P(AL`ZP4P';$N&;!0"7 $$0^@WFP%D 5 `' 8,&<9( -2
MZQT2"7 N%TI)(,8:@00`_R0@'5@=P1Q!!< 8P!OP)0$/&J$=8 `@!"!N;W<L
M<QD"`,!Y8AJ0'$(/<'8?&I '0 EP&" ><&9I9T\(< F &$(:\75T)4M9.R?R
M!:!M']$I`1IR87 O$3 BT <A' !L'G!D:?\)<"0`*W(9(!TB&-$O`1A MRA
M)- ;$7<88 ]@("80_3"!:B `)!$?P0;0!) C,?D72D]N&I /<"X@'G 4L#D%
M0&)U`Q $@1A 86L?"? <<1J!&C I8#4P*[LO<B1P+C8P%TH#\&P)4.<760KT
M'L S-@% %: !0 \N,1P`) `0=#$V("WU.B)/!1!G"X '0 70(X'X86=E.B,7
M1CDT.0$+$\$Y-FDM,30T`4 >P#@Q.# !0 S0/<-B("Y&`V$7, R28A;4($(-
M!9!K`_ 9\5M3353(4#IW"@!X0"A `""2:![!:RXS8'1=%T4O/O &8 (P/U=4
M"E!S9)LIP"E@01]0,:(P,2E@@P'0/E @.#HU.2-0$DU"5U1O0RA!4%+U&<!8
M!@!P!9 ',3$P'-(K!Y %0$<?,7!"6'5B1FHC\3]76W=X`)!G8EU#H#(S.">B
M'2)!_2\`(3O//-HXA NV%U,RA0)4'3%73C!8+3.M&S M&= :@5<H15,!D!<=
```

```
MHRO"2TYH`D!P.B\T+W=3("XK(!30=2[)+4$O8SJ@+6(+@%,0WG@*L#M04[ Z
MH#]/E!=*_T]2`B NP2XQ`F R$";"&%#[&_ Q,6T$`2MS-4$N( D1?R P&> >
M<"^!#Z$?P!YP3'D;\"],`B >0"0Q%T1D]0(@)P5 :RDQ,-%7L2^!_ULP*2(U
MTUFQ'2(+@ (0'E"]`-!K77$OA4KB(S%#`Y'?*A,CT$C%&= W0#\72@A0OP"
M(H D`!VR&,,J<'(></\91!L`*&-7D0.@*E$>TQD@_'!U-T F\06@(I CX!L!
M_Q=$+4$=8#-@+9(F$2* `2"W*W$+@!T3=P-@'C%H!O#[!Y C,4YD45;U`A W
M0"E _1[491=$"X =\6&D)N$D0?\F$ ]P6%0S\ELQ76(D( ;@\RP`1. N-6?A
M"'!H,B-2_"UF'L ?8%P12$$8<6G_\QBB&H%E>!P``($J<1D1]RDP*:$ZH&,9
M,C30)&$%0/MLX@!P>3#@)1(9L 9@!4#_(I 8L!GA%T0=(E &1U =\)=1%!I@
M)N)B"=%Z92E@_P= &% ?0VME+Y$(<&<U%,'_6M4O`QVS<,$%L4!S+[08,'\;
M$78R&6 DT&[!7?$`D&[^8R_18F(84R;#*K1O& = OR/@>N%+1!U@(^ 9H4T>
M<.\QD'PP':,&X'@>4"/07*+_'3%U=B `!Y%U<130"Q,78M9P9_ S86I=X7,I
M8##D_P# -- $( EP!&!C\WG$:P3W;J4<L'8`>2,R*4 E$5A3ST[U2O) <R<`
M.59=P0) YV)Q*6 %`&%W?H)SP0(A_R^4>V$;(!L1'2)=T 2A)#+_"U ?4#M0
M9P)T-5F$?'DBD.UH2W-+UX>71 0`"U$><"\J0%+$9_ '@"Y!>R]^.4$B+W1*
M\2[PD$,N:NYP;P5*XR-@;TF2D)^1K_^2LBXQ29*3:$[V`'"#@&D1_P7 )P`)
MP5>QER49P3= (S'_?Z$IX#&Q+X$GXP$`*G )`+YP+7*944BA)4L_[%=!,;\W
M;I]?%W<[ERSQ+<-C"'#W"7 ","[!<TEP!/(IX"]C<TIS)"!S.ABP,B$'0'/V
M0&72@<%R*G!3LD[U&2#_(#"C!WFR&#!V,17A7@`R$-\+< ,@+X$CX"IA+4IS
M/;# -3<P-TU 'L =\'=H, &0$3 N!;"7RQ'Q``&KH ````,`$! ``````P`1
M$ `````#`( 0_____T `!S!@KYT`.OR_`4 `"#!@KYT`.OR_`0L``( (( 8`
M``````, ```````!&``````.%`````````P`"@ @@!@`````P ```````$8`
M````$(4````````#``6 "" &`````# ````````1@````!2A0``MPT```,`
M"8 (( 8``````, ```````!&``````&%`````````'@`B@ @@!@``````P ``
M`````$8`````5(4```$````$````."XP``L`)H (( 8``````, ```````!&
M``````Z%`````````P`G@ @@!@``````P ```````$8`````$84````````#
M``"F "" &`````# ````````1@`````8A0```````!X`.( (( 8``````, `
M``````!&`````#:%```!`````0`````````>`#F "" &``````# ````````
M1@`````WA0```0````$`````````'@`Z@ @@!@``````P ```````$8`````
M.(4```$````!`````````!X`/0`!````!0```%)%.B ``````P`--/TW```'
!EH4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

6. [wxsig] Firmware Upgrade for T238 OK

```
From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 2 Aug 2000 22:34:19 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100145-2000.08.02-22.42.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Will, got the firmware updated to 1.09.1R. The serial port on my IBM laptop wasn't working to well in DOS mode and that was causing my problem. Applying the update from my PC worked fine and went as described on your web page. I also had to run in DOS mode, even on my PIII 600.

Thanks for the new option to update my positional data and options for English/Metric on the temp.

```
---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

7. [wxsig] Hot 7805

```
From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 2 Aug 2000 22:35:51 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100146-2000.08.02-22.44.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

My 7805 is getting very hot when the backlight is plugged in. Is anyone else experiencing the same thing?

```
---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

8. [wxsig] Re: Hot 7805

```
From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 2 Aug 2000 22:12:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
```

Message-ID: <LYR15067-100149-2000.08.02-23.18.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>

> My 7805 is getting very hot when the backlight is plugged in. Is anyone
> else experiencing the same thing?
>
 The same thing happens with mine. I did install a dropping resistor (47
ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
across the regulator. I generally don't leave the backlight on for long
periods. However, I have inadvertently left it on overnight without a
meltdown.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] RE: Hot 7805

From: William Beals <will@beals5.com>
Date: Wed, 2 Aug 2000 22:18:48 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100150-2000.08.02-23.20.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Cool on the update finally working. As best I can tell, that app will only
work reliably in pure DOS mode. I had hoped to have someone write a
windows-based program for me, but the volunteer pulled himself from the
running. When the main code gets stable, maybe I will jump into writing a
windows program. It isn't high on my fun list right now though.

Yes, that regulator does get hot! My "+12V" wall-wart puts out about 14V,
even under load, so it does get toasty. As an experiment I have let it run
that way for weeks and weeks and nothing appears unstable, it does not go
into thermal shutdown or anything dramatic like that.

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Wednesday, August 02, 2000 9:36 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Hot 7805

My 7805 is getting very hot when the backlight is plugged in. Is anyone
else experiencing the same thing?

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(CD$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M`````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`5````4D4Z(%MW>'-I
M9UT@2&]T(#<X,#4`&@8!!8 #``X```#0!P@``@`6`!(`, `#`#P!`2" `P`.
M````T <(``(`%@`/``<``P`0`0$)@ $`(0```$1".3 V-3$Q0S(V.$0T,3%!
M.#4V,# P,$4X.4(S0S Y`/0&`0.0!@!L!P``(0````L``@`!````"P`C````
M```#`"8```````L`*0```````P`N```````#`#8``````$ `.0"@:<SK`?V_
M`1X`< `!````%0```%)%.B!;=WAS:6==($AO=" W.# U``````(!<0`!````
M%%@````&__0'KQ!%ED-QHPA'4J%8``.B;/ D``!X`'@P!````!0```%--5% `
```

```
M`````'@`?# $`````0`````=VEL;$!B96%L<S4N8V]M``,`!A ^J1O?`P`'$&(#
M```>``@0`0```&4```!224-(.D-/3TQ/3E1(15501$%4149)3D%,3%E73U)+
M24Y'05-"15-424-!3E1%3$PL5$A!5$%04%=)3$Q/3DQ95T]22U)%3$E!0DQ9
M24Y055)%1$]334]$14E(041(3U!%1%1/``````(!"1 !`````500``%$$``#F
M!0``3%I&=1,AMZ\_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R
M<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V#
M;F<Q,#,S"Z8'\/II#V Z"J(*A J "% &\ (@`B @=&AE('70<&1A=!B@9@N
M!T P;'D@=P6P%+%G+C8@#^ $(&('D 5 22!N8P.1&0`9<"P8<1CP('AA<' 9
MH ,0&#(9A2 ]"7!L!S "8!F0"X @</,(<!B@1$\%\ 1B&B$:T&4/<&0>X&]P
M"8 8<&_5'N%V&*!S`W!E`B 8H#9W!1 9`6$<$130;W=P<RUB80^@'Q 1,&]Y
M"<!A;1D@!;$'@!MP8M9U!4 8@G8&\'4", G@;P7 '= 9<!]A: =P#Z!L[F89
M( -A&'-R(Z #`!H#?E<8D!AD`, =H06@`0`@?F</L 0@&J =42+!`,!YQQJ
M&L$<(VIU;1P`"X#_'Y$@DAGQ(.@AYAZB!4 $`$QN)P5 )(!G:!A";?49D&8C
MH" =,!JA!1 L$+T%0&XA4!AQ"& L$"X72NY9!Y ;=0EP9R0@&/ %L4\A0 >1
M)V$?(70A&C!-@1F0(BLQ,E8B&:#]&6$M,= `(!W!)X$(8!O!HP;@(P$Q-%8;
M<&4?X.\#H".@!($LT&\?`!MP(!"?'9 %0#!''Y AH'1Y&B3Y`Y%E>!]0!1 '
M@ (P'L/_'^$D0"MQ+1$LL1N3,= L@?4%L7<)X&LV4A\0.4@MD/<8@"GC&_!E
M#X$S\2>V-/;?.H$G4#31*6(8@7(`P ,@?'-H(P`A00.@!;$`<'F].J1D(C$8
M\!<`+-%K&* _&Y(N.QPB%TH*]!TP,S:?`4 5H % (?$9`&-T$'30,38@+40B
M3RTQ&4+S!= 'D'-A)V!$(Q=&0S2G0P$+$T,V:2TS8#0!0'$=,#$X, % #-!'
MPV)<($8#81<P#))B%M0@&D(%D&L#\!B (%M3$$U44#H^0#!X0$<[,1B '3!N
M:RX@8'2^71=%2/ &8 (P25=7"8!5(&!S&.!Y&W!!+@!U.1JA,#(;< '02% @
M.2(Z0J @4$U,5U1OH4E75$%04B8@6 8`?1]08P<Q&L CL0EP&J%'QP-@&,!,
M6'5B:D-A25<(6W=X`)!G72!(]3RQ-TA -47/1MI"A NV_Q=3"N,*@#$Q54(K
M@2=2*=/]'^!R&9 PT1F@)D8AD$I0_QTP+5)9<0M0+@`G8!\0"X#['J(V4GD@
M41=$&T /H#:5_PGP4< I\1B"13 '@!AQ&?'N/T%N"H!%EUD(8!O0'?'>8PAP
M"7 ",!F!<U.0!/+/&H ?<U23&]!S.AF@!M#[.S!=X$ %H"D@3I $D!_@_BYD
ML1=$4& [<F+&( `)\-\?$"#P`F `<!SP92;!`R _'Y$D0!_1,A!4HD>P-3>0
M,#=-0"SB<RX!D+41,"X%L&<72A'Q`&M0`````P`0$ `````#`!$0``````,`
M@!#_____0 `',(#*06@!_;\!0 `(,(#*06@!_;\!"P``@ @@!@``````P ``
M`````$8``````X4````````#``* "" &``````# ````````1@`````0A0``
M``````,`!8 (( 8``````, ````````!&`````%*%``"W#0```P`)@ @@!@``
M````P ```````$8``````84````````>`"* "" &``````# ````````1@``
M``!4A0```0````0````X+C `"P`F@ @@!@``````P ```````$8`````#H4`
M```````#`"> "" &``````# ````````1@`````1A0````````,`*8 (( 8`
M`````, ```````!&`````!B%````````'@`X@ @@!@``````P ```````$8`
M````-H4```$````!`````````!X`.8 (( 8``````, ```````!&`````#>%
M```!`````0`````````>`#J "" &``````# ````````1@`````XA0```0``
G``$`````````'@`]``$````%````4D4Z( `````#``TT_3<``"?0
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

10. [wxsig] RE: Hot 7805

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 2 Aug 2000 23:29:36 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100151-2000.08.02-23.38.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have another project (PeekPak) that I used a backlit display for. It did the same thing to my 7805. I finally added a dropping resistance of about 180 ohms from the 12V supply to the 7805 to cool it down. I am comfortable leaving it run all the time. I may try the same with the T238.

If I was more comfortable with serial communications I would take a stab at your windows based programmer. Only program in VB so would have to use the MSComm ocx's. I gather your just writing data to the serial port with a bit of hand shaking initially, and then for confirmation after every line?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Re: Firmware Upgrade for T238 OK

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 03 Aug 2000 06:54:22 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100204-2000.08.03-07.00.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich Beckwith wrote:
>
> Will, got the firmware updated to 1.09.1R. The serial port on my IBM laptop
> wasn't working to well in DOS mode and that was causing my problem.
> Applying the update from my PC worked fine and went as described on your web
> page. I also had to run in DOS mode, even on my PIII 600.

FWIW, if you werre just openning a dos window in Win9x (98 is especially
bad about this) you didn't have a decent serial port available. If you
reboot in DOS mode, it usually works with the DOS programs I've had to
use.

73, gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

12. [wxsig] Re: Hot 7805

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 03 Aug 2000 07:00:53 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100206-2000.08.03-07.07.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ Chadwick wrote:
>
> ----- Original Message -----
> From: Rich Beckwith <wn0x@earthlink.net>
>
> > My 7805 is getting very hot when the backlight is plugged in. Is anyone
> > else experiencing the same thing?
> >
> The same thing happens with mine. I did install a dropping resistor (47
> ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
> across the regulator. I generally don't leave the backlight on for long
> periods. However, I have inadvertently left it on overnight without a
> meltdown.

Forgive me since I've not got the kit (and it sounds like there won't be
any available)... how is the 7805 heat-sunk? If there's not a heat-sink
on it, even a little clip-on makes a good addition to get things cooler:
the thermal mass for dissipation on those regulators is certainly
lacking. If there's a metal structure (box, etc) that it can be
attached to, that'd help. I've fried several 7805's that were
theoretically within dissipation limits until I started adding extra
heat-sink thermal mass.

Hope I'm not too far off in left field!

73, gerry
ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
They're real close together and one's more a test site, but they'll be
up.
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] RE: Hot 7805

From: "Aaron" <ae4ko@amsat.org>
Date: Thu, 3 Aug 2000 09:15:56 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100216-2000.08.03-08.20.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Rich:
>
> Cool on the update finally working. As best I can tell, that app will
> only work reliably in pure DOS mode. I had hoped to have someone
> write a windows-based program for me, but the volunteer pulled himself
> from the running. When the main code gets stable, maybe I will jump
> into writing a windows program. It isn't high on my fun list right
> now though.
>

I'm still trying to port the loader to Linux. My Linux box (spare
parts) is out of service for now, though, so it will be a little while.

> Yes, that regulator does get hot! My "+12V" wall-wart puts out about
> 14V, even under load, so it does get toasty. As an experiment I have
> let it run that way for weeks and weeks and nothing appears unstable,
> it does not go into thermal shutdown or anything dramatic like that.
>
> will

I've left mine on for over a month (no enclosure and no extra
heatsink). Now I just turn the backlight on when I need it (no
sense in having a heater on in the room, especially here in Florida
<grin>)

(Random Quote)
    Concerto (n): a fight between a piano and a pianist.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] Re: Hot 7805

From: Gregory Beat <gregory.beat@mediaone.net>
Date: Thu, 03 Aug 2000 09:58:59 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100244-2000.08.03-10.07.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich -

I have same problem with some other kit projects. You may wish to look at
larger surface area heat sinks (Aavid) ... I will check part numbers for
you.

I also use the nice large heat sinks for TO-220 devices , that I salvage
from bad PC switching power supplies (nice part is that they are free !).

Greg

Rich Beckwith wrote:

> My 7805 is getting very hot when the backlight is plugged in. Is anyone
> else experiencing the same thing?
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] TAPR Kit

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 3 Aug 2000 18:23:03 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100358-2000.08.03-17.29.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is it possible to get the T-238 kit sans the display? I have
experimented with my beta kit and found I can fire it up, set things up,
the remove the display completely and let it run. If I need to check the

data I just fire up the Internet or check my D700 ... I bought a second station and plan to put upa remote site where the display is just a waste and cannot see spending mony on a display that will rarely be viewed.

For that matter I would be equally happy just to be able to get my hands on a 32MHZ Crystal, the CPU and MAX232 and roll my on a Rat Shack proto board.

For remote sites we do need to add an MX614 modem chip and have the controller generate its own frames and just feed it to a radio and have it use the MX614s energy detect for DCD holdoff. It is equaly senseless to waste a TNC on that with the spare horsepower and code space the Motorola 68HC908 has.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

16. [wxsig] Errors

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Thu, 3 Aug 2000 18:21:08 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100377-2000.08.03-18.30.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, I noticed that my station quit reporting sometime today around noon. When I arrived home the "Error Counters" screen was displayed: Temp 005 Rain 002 Wspd 003 Wdir 003. When I select Menu and Select, I was back on the air. Does the unit stop sending when it gets errors?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

17. [wxsig] DOS mode for downloads

From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 19:58:42 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100442-2000.08.03-22.38.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

IN CASE IT IS NOT EMPHASIZED ENOUGH IN THE MANUAL AND WEBSITE: FOR DOWNLOADS YOU MUST BOOT UP YOUR COMPUTER IN DOS MODE, DO NOT USE A DOS WINDOW.

Gerry: Thanks for remiding me of this again. Now that the kits are being released, a pre-emptive strike is in order!

Gerry: You say your kit is not avialable? I assume you are referring to the weather sensor from Dallas, not the TAPR kit, right? TAPR has kits available. Dallas quite selling the sensors, but we are confident there will be replacement sensors of some kind available. Hopefully within a few months.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] Hot 7805s

From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 19:59:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100443-2000.08.03-22.38.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Rich: The 7805 is a simple cheasy, but cheap solution that is hard to
argue with. I mostly leave the backlight off, so the heat isn't a problem
for me either. Bigger heatsinks certainly never hurt. The dropping
resistor is good to for spreading out the heat across more devices. As an
experiment I tried using the unit with no heatsink and the backlight on.
 The regulator does go into thermal shutdown under these circumstances.

Rich: I know little about VB. I have a VC compiler and if I do something,
it will likely be with that.

Gerry: We do have a little heatsink on the bugger, so the device is not
totally alone...

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

19. [wxsig] Re: Hot 7805

From: "Russ Chadwick" <crb5@uswest.net>
Date: Thu, 3 Aug 2000 21:34:58 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100444-2000.08.03-22.40.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
>
> Forgive me since I've not got the kit (and it sounds like there won't be
> any available)... how is the 7805 heat-sunk? If there's not a heat-sink
> on it, even a little clip-on makes a good addition to get things cooler:
> the thermal mass for dissipation on those regulators is certainly
> lacking. If there's a metal structure (box, etc) that it can be
> attached to, that'd help. I've fried several 7805's that were
> theoretically within dissipation limits until I started adding extra
> heat-sink thermal mass.

The 7805 is supplied with a small finned heat sink. Without this heat sink,
it gets way too hot. The heat sink really helps dissipate the heat.
Mounting the 7805 to the aluminum case that I use would be even better, but
would introduce mechanical problems. I've convinced myself that the small
heat sink inside a non-ventilated aluminum case will be OK.

> ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
> They're real close together and one's more a test site, but they'll be
> up.

Cool on the GPS sites. Good luck with them.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

20. [wxsig] No LCD

From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 21:43:58 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100445-2000.08.03-22.51.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

Theoretically the T238 works fine without the display. Alas I can't claim this was by design. It turns out that the way some of the debug configuration resistors lined up that it should work OK. Russ has tried this out and it works--mostly. He had some trouble with some data getting corrupted when he removed the display, but he has been dealing with some other data corruption issues as well. Not sure where the problem was on that one yet. I have some unreleased code that should clear up some of Russes issues.

There is nothing stopping you from building your own station from scratch. That is how all the pre-beta folk did it. It works fine.

The idea of adding the MX614 has come up a few times before. I havn't personally looked into it too much het, but consensus seems to be that it is possible. There may be a follow-on to the current kit and that may be the time to look at it much more seriously.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] Error counters

From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 21:49:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100446-2000.08.03-22.51.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

The error counters can and will increment occasionally during normal use. Errors do happen on the bus, usually do to the occasional unexpected reset or something. These errors should not cause the station to stop sending data. All I do is ignore that sample point in my averaging routines and continue normally.

One thing I ran into, but it has gone away was that my TNC was dropping out of converstation mode for some reason and that was killing my transmissions. Going in and out of reporting mode put the TNC back into converstation mode. What annoys me is that I did nothing to make this problem go away so I am not able to debug it right now, but suspect the problem will come back. This is easy to test on your end by hooking up to the TNC with a computer and seeing if it has dropped out of conversation mode.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740

303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

22. [wxsig] Missing Hurricane Plots Maybe

From: "Dale Huguley" <kg5qd@earthlink.net>
Date: Fri, 4 Aug 2000 10:29:02 -0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100529-2000.08.04-05.38.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All-
    I am pulling hair out (and I don't have much left) looking for a problem with display of the predicted hurricane positions from my parser. I first thought it was a problem with the aprsd server- but they are being sent from it fine. The "present position" always plots. If I have my local loop-back port open- the predicted positions plot. If I am on the aprs internet feed only (either one) they don't plot. This appears to be a problem with winaprs (I am running 2.4.7) What possible difference the internet vs. the direct packet would make is beyond me.

    At any rate if some of you folks could see if you are having the same problem. Tropical Depression Three has formed in the far eastern Atlantic and there will be updates at 0300z 0900z 1500z 2100z (up to 30 minutes before the scheduled times generally). I will need to know what software you are running- if you received the data by rf or internet- and if by internet which feed.

Please e-mail me direct at kg5qd@earthlink.net

73 de a very confused kg5qd Dale

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Re: DOS mode for downloads

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Fri, 04 Aug 2000 06:50:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100536-2000.08.04-06.56.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
>
> Folks:
>
> IN CASE IT IS NOT EMPHASIZED ENOUGH IN THE MANUAL AND WEBSITE: FOR
> DOWNLOADS YOU MUST BOOT UP YOUR COMPUTER IN DOS MODE, DO NOT USE A DOS
> WINDOW.
>
> Gerry: Thanks for remiding me of this again. Now that the kits are being
> released, a pre-emptive strike is in order!
>
> Gerry: You say your kit is not avialable? I assume you are referring to
> the weather sensor from Dallas, not the TAPR kit, right? TAPR has kits
> available. Dallas quite selling the sensors, but we are confident there
> will be replacement sensors of some kind available. Hopefully within a few
> months.

Aha! I got the impression from the note on the tapr homepage that the kits were all spoken for... I guess I'll get a credit card out!

Thanks, gerry

ps: I hope the linux s/w comes along... I'm quickly running out of machines with DOS/win capabilities unless VMWare is involved! :-)
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] Re: Error counters

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Fri, 04 Aug 2000 07:00:41 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100539-2000.08.04-07.06.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
>
> Rich:
>
> The error counters can and will increment occasionally during normal use.
> Errors do happen on the bus, usually do to the occasional unexpected reset
> or something. These errors should not cause the station to stop sending
> data. All I do is ignore that sample point in my averaging routines and
> continue normally.
>
> One thing I ran into, but it has gone away was that my TNC was dropping out
> of converstation mode for some reason and that was killing my
> transmissions. Going in and out of reporting mode put the TNC back into
> converstation mode. What annoys me is that I did nothing to make this
> problem go away so I am not able to debug it right now, but suspect the
> problem will come back. This is easy to test on your end by hooking up to
> the TNC with a computer and seeing if it has dropped out of conversation
> mode.

Depending on the TNC, this suggests you had either a TNC power glitch
that didn't reset the non-volatile memory... ie., a power-based
"restart" vice a "RESET". I saw this a number of times while working
with power of questionable etiology on some school buses, using PacComm
TNCs. We ended up mod'ing the EPROM to fix it. but I digress.
Another possibility is that somewhwere, somehow, the wx station sent a
"CTRL-C" (nee' break) to the comm line, thus telling it to go to
command mode.

The PacComms have a command (UIMODE or DATAMODE, depending on version
and ham vs commercial target market) that tells the TNC what mode to
come up from a RESTART or normal power cycle in: command or
transmit-ready, and one can always tell the TNC to use transparent vs
regular converse mode, making it that much harder to get back to the
command prompt.

One other problem I've seen is, TNC-2 clones, when the backup battery is
getting low, tend to randomly RESET (lose everything in settings) on a
long-period random cycle. The periodicity decreases as the battery more
closely approaches dead.

Just a couple of random musings...
Gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] Re: Missing Hurricane Plots Maybe

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Fri, 04 Aug 2000 07:47:16 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100544-2000.08.04-07.53.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dale Huguley wrote:
>
> Hi All-
>   I am pulling hair out (and I don't have much left) looking for a problem
> with display of the predicted hurricane positions from my parser. I first
> thought it was a problem with the aprsd server- but they are being sent from
> it fine. The "present position" always plots. If I have my local loop-back
> port open- the predicted positions plot. If I am on the aprs internet feed

> only (either one) they don't plot. This appears to be a problem with
> winaprs (I am running 2.4.7) What possible difference the internet vs. the
> direct packet would make is beyond me.
>
>   At any rate if some of you folks could see if you are having the same
> problem. Tropical Depression Three has formed in the far eastern Atlantic
> and there will be updates at 0300z 0900z 1500z 2100z (up to 30 minutes
> before the scheduled times generally). I will need to know what software
> you are running- if you received the data by rf or internet- and if by
> internet which feed.

The "stuff" in the pacific last week (or earlier this week? It's been
one of those) came thru fine. Today, I'm finding nothing regarding the
positions you're interested in. (xastir 0.3.4a)

73, gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

26. [wxsig] Kit wanted.

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Fri, 4 Aug 2000 07:58:55 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100545-2000.08.04-08.05.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Would someone PLEASE sell me a WX-1 (kit or assembled) !!!
I gave the only one I had to my folks and I have two T238 kits on the way
(one for me and one for my folks in Wyoming).
Sorry Greg, I missed your offer. . .

Btw,
Some of the data errors you guys are having may be due to external factors
like ESD or RF emissions from local or semi-local sources. Being a bunch of
hams -I know what some of you guys are doing to the air. Since this product
suite is unshielded and has never been tested for susceptibility to such
phenomenon, this is exactly how the effects manifest. Some electronics are
sensitive to someone jingling keys or coins in their pocket from a meter
distance.

Hey! I take the amateur license exam 8/8. Going after everything but CW.

Cheers,
Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
(product safety and EMC hack)
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

                -----Original Message-----
                From: TAPR WX Special Interest Group digest
[mailto:wxsig@lists.tapr.org]
                Sent: Friday, August 04, 2000 12:02 AM
                To: wxsig digest recipients
                Subject: wxsig digest: August 03, 2000

                TAPR WX Special Interest Group Digest for Thursday, August
03, 2000.

                1. Re: Firmware Upgrade for T238 OK
                2. Re: Hot 7805
                3. RE: Hot 7805
                4. Re: Hot 7805
                5. TAPR Kit
                6. Errors
                7. DOS mode for downloads
                8. Hot 7805s

9. Re: Hot 7805
10. No LCD
11. Error counters

Subject: Re: Firmware Upgrade for T238 OK
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 03 Aug 2000 06:54:22 -0500
X-Message-Number: 1

Rich Beckwith wrote:
>
> Will, got the firmware updated to 1.09.1R. The serial port on my IBM laptop
> wasn't working to well in DOS mode and that was causing my problem.
> Applying the update from my PC worked fine and went as described on your web
> page. I also had to run in DOS mode, even on my PIII 600.

FWIW, if you werre just openning a dos window in Win9x (98 is especially
bad about this) you didn't have a decent serial port available. If you
reboot in DOS mode, it usually works with the DOS programs I've had to
use.

73, gerry
--
Gerry Creager gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

Subject: Re: Hot 7805
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 03 Aug 2000 07:00:53 -0500
X-Message-Number: 2

Russ Chadwick wrote:
>
> ----- Original Message -----
> From: Rich Beckwith <wn0x@earthlink.net>
>
> > My 7805 is getting very hot when the backlight is plugged in. Is anyone
> > else experiencing the same thing?
> >
> The same thing happens with mine. I did install a dropping resistor (47
> ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
> across the regulator. I generally don't leave the backlight on for long
> periods. However, I have inadvertently left it on overnight without a
> meltdown.

Forgive me since I've not got the kit (and it sounds like there won't be
any available)... how is the 7805 heat-sunk? If there's not a heat-sink
on it, even a little clip-on makes a good addition to get things cooler:
the thermal mass for dissipation on those regulators is certainly
lacking. If there's a metal structure (box, etc) that it can be
attached to, that'd help. I've fried several 7805's that

were
theoretically within dissipation limits until I started
adding extra
heat-sink thermal mass.

Hope I'm not too far off in left field!

73, gerry
ps: Russ, we're approved for SuomiNet and I'll have 2 sites
here.
They're real close together and one's more a test site, but
they'll be
up.
--
Gerry Creager   gerry@cs.tamu.edu,
gerry@page4.cs.tamu.edu
Network Engineering |Research focusing
on
Computer Science Department |Satellite Geodesy
and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

Subject: RE: Hot 7805
From: "Aaron" <ae4ko@amsat.org>
Date: Thu, 3 Aug 2000 09:15:56 -0400
X-Message-Number: 3

> Rich:
>
> Cool on the update finally working. As best I can tell,
that app will
> only work reliably in pure DOS mode. I had hoped to have
someone
> write a windows-based program for me, but the volunteer
pulled himself
> from the running. When the main code gets stable, maybe I
will jump
> into writing a windows program. It isn't high on my fun
list right
> now though.
>

I'm still trying to port the loader to Linux. My Linux box
(spare
parts) is out of service for now, though, so it will be a
little while.

> Yes, that regulator does get hot! My "+12V" wall-wart
puts out about
> 14V, even under load, so it does get toasty. As an
experiment I have
> let it run that way for weeks and weeks and nothing
appears unstable,
> it does not go into thermal shutdown or anything dramatic
like that.
>
> will

I've left mine on for over a month (no enclosure and no
extra
heatsink). Now I just turn the backlight on when I need it
(no
sense in having a heater on in the room, especially here in
Florida
<grin>)

(Random Quote)
    Concerto (n): a fight between a piano and a pianist.

Subject: Re: Hot 7805
From: Gregory Beat <gregory.beat@mediaone.net>
Date: Thu, 03 Aug 2000 09:58:59 -0500
X-Message-Number: 4

Rich -

I have same problem with some other kit projects. You may wish to look at larger surface area heat sinks (Aavid) ... I will check part numbers for you.

I also use the nice large heat sinks for TO-220 devices , that I salvage from bad PC switching power supplies (nice part is that they are free !).

Greg

Rich Beckwith wrote:

> My 7805 is getting very hot when the backlight is plugged in. Is anyone
> else experiencing the same thing?
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---

Subject: TAPR Kit
From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 3 Aug 2000 18:23:03 -0400
X-Message-Number: 5

Is it possible to get the T-238 kit sans the display? I have experimented with my beta kit and found I can fire it up, set things up, the remove the display completely and let it run. If I need to check the data I just fire up the Internet or check my D700 ... I bought a second station and plan to put upa remote site where the display is just a waste and cannot see spending mony on a display that will rarely be viewed.

For that matter I would be equally happy just to be able to get my hands on a 32MHZ Crystal, the CPU and MAX232 and roll my on a Rat Shack proto board.

For remote sites we do need to add an MX614 modem chip and have the controller generate its own frames and just feed it to a radio and have it use the MX614s energy detect for DCD holdoff. It is equaly senseless to waste a TNC on that with the spare horsepower and code space the Motorola 68HC908 has.

Subject: Errors
From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Thu, 3 Aug 2000 18:21:08 -0500
X-Message-Number: 6

Will, I noticed that my station quit reporting sometime
today around noon.
Will When I arrived home the "Error Counters" screen was
displayed: Temp 005 Rain
002 Wspd 003 Wdir 003. When I select Menu and Select, I was
back on the
air. Does the unit stop sending when it gets errors?

Subject: DOS mode for downloads
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 19:58:42 -0600
X-Message-Number: 7

Folks:

IN CASE IT IS NOT EMPHASIZED ENOUGH IN THE MANUAL AND
WEBSITE: FOR
DOWNLOADS YOU MUST BOOT UP YOUR COMPUTER IN DOS MODE, DO NOT
USE A DOS
WINDOW.

Gerry: Thanks for remiding me of this again. Now that the
kits are being
released, a pre-emptive strike is in order!

Gerry: You say your kit is not avialable? I assume you are
referring to
the weather sensor from Dallas, not the TAPR kit, right?
TAPR has kits
available. Dallas quite selling the sensors, but we are
confident there
will be replacement sensors of some kind available.
Hopefully within a few
months.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Hot 7805s
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 19:59:26 -0600
X-Message-Number: 8

Folks:

Rich: The 7805 is a simple cheasy, but cheap solution that
is hard to
argue with. I mostly leave the backlight off, so the heat
isn't a problem
for me either. Bigger heatsinks certainly never hurt. The
dropping
resistor is good to for spreading out the heat across more
devices. As an
experiment I tried using the unit with no heatsink and the
backlight on.
The regulator does go into thermal shutdown under these
circumstances.

Rich: I know little about VB. I have a VC compiler and if I

do something,
it will likely be with that.

Gerry: We do have a little heatsink on the bugger, so the
device is not
totally alone...

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Re: Hot 7805
From: "Russ Chadwick" <crb5@uswest.net>
Date: Thu, 3 Aug 2000 21:34:58 -0600
X-Message-Number: 9

----- Original Message -----
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
>
> Forgive me since I've not got the kit (and it sounds like
there won't be
> any available)... how is the 7805 heat-sunk? If there's
not a heat-sink
> on it, even a little clip-on makes a good addition to get
things cooler:
> the thermal mass for dissipation on those regulators is
certainly
> lacking. If there's a metal structure (box, etc) that it
can be
> attached to, that'd help. I've fried several 7805's that
were
> theoretically within dissipation limits until I started
adding extra
> heat-sink thermal mass.

The 7805 is supplied with a small finned heat sink. Without
this heat sink,
it gets way too hot. The heat sink really helps dissipate
the heat.
Mounting the 7805 to the aluminum case that I use would be
even better, but
would introduce mechanical problems. I've convinced myself
that the small
heat sink inside a non-ventilated aluminum case will be OK.

> ps: Russ, we're approved for SuomiNet and I'll have 2
sites here.
> They're real close together and one's more a test site,
but they'll be
> up.

Cool on the GPS sites. Good luck with them.

Russ
kb0tvj

Subject: No LCD
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 21:43:58 -0600
X-Message-Number: 10

Brian:

Theoretically the T238 works fine without the display. Alas I can't claim this was by design. It turns out that the way some of the debug configuration resistors lined up that it should work OK. Russ has tried this out and it works--mostly. He had some trouble with some data getting corrupted when he removed the display, but he has been dealing with some other data corruption issues as well. Not sure where the problem was on that one yet. I have some unreleased code that should clear up some of Russes issues.

There is nothing stopping you from building your own station from scratch. That is how all the pre-beta folk did it. It works fine.

The idea of adding the MX614 has come up a few times before. I havn't personally looked into it too much het, but consensus seems to be that it is possible. There may be a follow-on to the current kit and that may be the time to look at it much more seriously.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Error counters
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 21:49:22 -0600
X-Message-Number: 11

Rich:

The error counters can and will increment occasionally during normal use. Errors do happen on the bus, usually do to the occasional unexpected reset or something. These errors should not cause the station to stop sending data. All I do is ignore that sample point in my averaging routines and continue normally.

One thing I ran into, but it has gone away was that my TNC was dropping out of converstation mode for some reason and that was killing my transmissions. Going in and out of reporting mode put the TNC back into converstation mode. What annoys me is that I did nothing to make this problem go away so I am not able to debug it right now, but suspect the problem will come back. This is easy to test on your end by hooking up to the TNC with a computer and seeing if it has dropped out of conversation

mode.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

END OF DIGEST

You are currently subscribed to wxsig as:
kyle.ehler@lsil.com
To unsubscribe send a blank email to
leave-wxsig-15067P@lists.tapr.org

27. [wxsig] RE: Hot 7805

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 4 Aug 2000 10:01:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100554-2000.08.04-09.05.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> My 7805 is getting very hot when the backlight is plugged in. Is anyone
> else experiencing the same thing?

Rich,

It will run hot if you supply 12 volts or higher. I feed my T-238 9 Volts
and the 7805 is barely warm.

- Steve, N7HPR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

28. [wxsig] T-238 Kit Availability

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 4 Aug 2000 10:11:38 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100557-2000.08.04-09.16.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Aha! I got the impression from the note on the tapr homepage that the
> kits were all spoken for... I guess I'll get a credit card out!

Gerry and everyone,

The note emphasizes that the Dallas Weather instrument is no longer
available. And because of that, we only kitted 100 T-238 kits. If demand
remains high will make more, but we are looking for a replacement for the
Dallas Weather Station,

To summarize, TAPR still has T-238 kits available. Better gets your now
because once the kits are sold, we do not have a schedule for follow on
kits.

- Steve N7HPR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] 1 Wire Weather Station For Sale

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Fri, 4 Aug 2000 10:08:50 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100578-2000.08.04-10.15.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a one wire station (temp/wind speed/direction unit) and rain guage
for sale. I have assembled and tested, but not sealed or calibrated the
units. As I'm living on a military installation and have no place to mount
it, I will be willing to let it go at cost. Please contact me if you're
intersted.

Jack KE4LWT
[Attachment: Smith, Jack R SGT 658 QM CO.vcf; application/octet-stream; 400 bytes]

30. [wxsig] Re: 1 Wire Weather Station For Sale

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Fri, 04 Aug 2000 12:24:20 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100608-2000.08.04-12.27.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

yes I am very interested

Rich Wn0x

>>> Jack.Smith1@usarc-emh2.army.mil 08/04/00 10:08AM >>>
I have a one wire station (temp/wind speed/direction unit) and rain guage
for sale. I have assembled and tested, but not sealed or calibrated the
units. As I'm living on a military installation and have no place to mount
it, I will be willing to let it go at cost. Please contact me if you're
intersted.

Jack KE4LWT

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

31. [wxsig] RE: Kit wanted.

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Fri, 4 Aug 2000 12:39:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100614-2000.08.04-12.46.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

yle,

I just posted my kit for sale. It's the main unit plus a rain guage. It's
partially assembled (not sealed or calibrated).

I paid 139.95 for the set, and i'll let it go for that. I'll pay shipping
in the US, too.

Jack KE4LWT

-----Original Message-----
From: Ehler, Kyle [mailto:kehler@lsil.com]
Sent: Friday, August 04, 2000 7:59 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Kit wanted.

Would someone PLEASE sell me a WX-1 (kit or assembled) !!!
I gave the only one I had to my folks and I have two T238 kits on the way
(one for me and one for my folks in Wyoming).
Sorry Greg, I missed your offer. . .

Btw,
Some of the data errors you guys are having may be due to external factors
like ESD or RF emissions from local or semi-local sources. Being a bunch of
hams -I know what some of you guys are doing to the air. Since this product
suite is unshielded and has never been tested for susceptibility to such

phenomenon, this is exactly how the effects manifest. Some electronics are
sensitive to someone jingling keys or coins in their pocket from a meter
distance.

Hey! I take the amateur license exam 8/8. Going after everything but CW.

Cheers,
Kyle Ehler   <mailto:kyle.ehler@lsil.com> kyle.ehler@lsil.com
Assistant Design Engineer
(product safety and EMC hack)
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

        BM__MailData-----Original Message-----
From: TAPR WX Special Interest Group digest [mailto:wxsig@lists.tapr.org
<mailto:wxsig@lists.tapr.org>]
Sent: Friday, August 04, 2000 12:02 AM
To: wxsig digest recipients
Subject: wxsig digest: August 03, 2000

        TAPR WX Special Interest Group Digest for Thursday, August 03, 2000.

        1. Re: Firmware Upgrade for T238 OK
2. Re: Hot 7805
3. RE: Hot 7805
4. Re: Hot 7805
5. TAPR Kit
6. Errors
7. DOS mode for downloads
8. Hot 7805s
9. Re: Hot 7805
10. No LCD
11. Error counters

        Subject: Re: Firmware Upgrade for T238 OK
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 03 Aug 2000 06:54:22 -0500
X-Message-Number: 1

        Rich Beckwith wrote:
>
> Will, got the firmware updated to 1.09.1R. The serial port on my IBM
laptop
> wasn't working to well in DOS mode and that was causing my problem.
> Applying the update from my PC worked fine and went as described on your
web
> page. I also had to run in DOS mode, even on my PIII 600.

        FWIW, if you werre just openning a dos window in Win9x (98 is
especially
bad about this) you didn't have a decent serial port available. If you
reboot in DOS mode, it usually works with the DOS programs I've had to
use.

        73, gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

        Subject: Re: Hot 7805
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 03 Aug 2000 07:00:53 -0500
X-Message-Number: 2

        Russ Chadwick wrote:

>
> ----- Original Message -----
> From: Rich Beckwith <wn0x@earthlink.net>
>
> > My 7805 is getting very hot when the backlight is plugged in. Is anyone

> > else experiencing the same thing?
> >
> The same thing happens with mine. I did install a dropping resistor (47
> ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
> across the regulator. I generally don't leave the backlight on for long
> periods. However, I have inadvertently left it on overnight without a
> meltdown.

        Forgive me since I've not got the kit (and it sounds like there
won't be
any available)... how is the 7805 heat-sunk? If there's not a heat-sink
on it, even a little clip-on makes a good addition to get things cooler:
the thermal mass for dissipation on those regulators is certainly
lacking. If there's a metal structure (box, etc) that it can be
attached to, that'd help. I've fried several 7805's that were
theoretically within dissipation limits until I started adding extra
heat-sink thermal mass.

        Hope I'm not too far off in left field!

        73, gerry
ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
They're real close together and one's more a test site, but they'll be
up.
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

        Subject: RE: Hot 7805
From: "Aaron" <ae4ko@amsat.org>
Date: Thu, 3 Aug 2000 09:15:56 -0400
X-Message-Number: 3

        > Rich:
>
> Cool on the update finally working. As best I can tell, that app will
> only work reliably in pure DOS mode. I had hoped to have someone
> write a windows-based program for me, but the volunteer pulled himself
> from the running. When the main code gets stable, maybe I will jump
> into writing a windows program. It isn't high on my fun list right
> now though.
>

        I'm still trying to port the loader to Linux. My Linux box (spare
parts) is out of service for now, though, so it will be a little while.

        > Yes, that regulator does get hot! My "+12V" wall-wart puts out
about
> 14V, even under load, so it does get toasty. As an experiment I have
> let it run that way for weeks and weeks and nothing appears unstable,
> it does not go into thermal shutdown or anything dramatic like that.
>
> will

        I've left mine on for over a month (no enclosure and no extra
heatsink). Now I just turn the backlight on when I need it (no
sense in having a heater on in the room, especially here in Florida
<grin>)

(Random Quote)
    Concerto (n): a fight between a piano and a pianist.

Subject: Re: Hot 7805
From: Gregory Beat <gregory.beat@mediaone.net>
Date: Thu, 03 Aug 2000 09:58:59 -0500
X-Message-Number: 4

Rich -

I have same problem with some other kit projects. You may wish to look at
larger surface area heat sinks (Aavid) ... I will check part numbers for you.

I also use the nice large heat sinks for TO-220 devices , that I salvage
from bad PC switching power supplies (nice part is that they are free !).

Greg

Rich Beckwith wrote:

> My 7805 is getting very hot when the backlight is plugged in. Is anyone
> else experiencing the same thing?
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---

Subject: TAPR Kit
From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 3 Aug 2000 18:23:03 -0400
X-Message-Number: 5

Is it possible to get the T-238 kit sans the display? I have experimented with my beta kit and found I can fire it up, set things up, the remove the display completely and let it run. If I need to check the data I just fire up the Internet or check my D700 ... I bought a second station and plan to put upa remote site where the display is just a waste and cannot see spending mony on a display that will rarely be viewed.

For that matter I would be equally happy just to be able to get my hands on a 32MHZ Crystal, the CPU and MAX232 and roll my on a Rat Shack proto board.

For remote sites we do need to add an MX614 modem chip and have the controller generate its own frames and just feed it to a radio and have it use the MX614s energy detect for DCD holdoff. It is equaly senseless to waste a TNC on that with the spare horsepower and code space the Motorola 68HC908 has.

Subject: Errors
From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Thu, 3 Aug 2000 18:21:08 -0500
X-Message-Number: 6

Will, I noticed that my station quit reporting sometime today around noon.
When I arrived home the "Error Counters" screen was displayed: Temp 005 Rain

002 Wspd 003 Wdir 003. When I select Menu and Select, I was back on the air. Does the unit stop sending when it gets errors?

Subject: DOS mode for downloads
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 19:58:42 -0600
X-Message-Number: 7

Folks:

IN CASE IT IS NOT EMPHASIZED ENOUGH IN THE MANUAL AND WEBSITE: FOR DOWNLOADS YOU MUST BOOT UP YOUR COMPUTER IN DOS MODE, DO NOT USE A DOS WINDOW.

Gerry: Thanks for remiding me of this again. Now that the kits are being released, a pre-emptive strike is in order!

Gerry: You say your kit is not avialable? I assume you are referring to the weather sensor from Dallas, not the TAPR kit, right? TAPR has kits available. Dallas quite selling the sensors, but we are confident there will be replacement sensors of some kind available. Hopefully within a few months.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Hot 7805s
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 19:59:26 -0600
X-Message-Number: 8

Folks:

Rich: The 7805 is a simple cheasy, but cheap solution that is hard to argue with. I mostly leave the backlight off, so the heat isn't a problem for me either. Bigger heatsinks certainly never hurt. The dropping resistor is good to for spreading out the heat across more devices. As an experiment I tried using the unit with no heatsink and the backlight on. The regulator does go into thermal shutdown under these circumstances.

Rich: I know little about VB. I have a VC compiler and if I do something, it will likely be with that.

Gerry: We do have a little heatsink on the bugger, so the device is not totally alone...

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Re: Hot 7805
From: "Russ Chadwick" <crb5@uswest.net>
Date: Thu, 3 Aug 2000 21:34:58 -0600
X-Message-Number: 9

----- Original Message -----
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
>
> Forgive me since I've not got the kit (and it sounds like there won't be
> any available)... how is the 7805 heat-sunk? If there's not a heat-sink
> on it, even a little clip-on makes a good addition to get things cooler:
> the thermal mass for dissipation on those regulators is certainly
> lacking. If there's a metal structure (box, etc) that it can be
> attached to, that'd help. I've fried several 7805's that were
> theoretically within dissipation limits until I started adding extra
> heat-sink thermal mass.

The 7805 is supplied with a small finned heat sink. Without this heat sink,
it gets way too hot. The heat sink really helps dissipate the heat.
Mounting the 7805 to the aluminum case that I use would be even better, but
would introduce mechanical problems. I've convinced myself that the small
heat sink inside a non-ventilated aluminum case will be OK.

> ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
> They're real close together and one's more a test site, but they'll be
> up.

Cool on the GPS sites. Good luck with them.

Russ
kb0tvj

Subject: No LCD
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 21:43:58 -0600
X-Message-Number: 10

Brian:

Theoretically the T238 works fine without the display. Alas I can't claim
this was by design. It turns out that the way some of the debug
configuration resistors lined up that it should work OK. Russ has tried
this out and it works--mostly. He had some trouble with some data getting
corrupted when he removed the display, but he has been dealing with some
other data corruption issues as well. Not sure where the problem was on
that one yet. I have some unreleased code that should clear up some of
Russes issues.

There is nothing stopping you from building your own station from scratch.
That is how all the pre-beta folk did it. It works fine.

The idea of adding the MX614 has come up a few times before. I havn't
personally looked into it too much het, but consensus seems to be that it
is possible. There may be a follow-on to the current kit and that may be
the time to look at it much more seriously.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Error counters
From: William Beals <will@beals5.com>
Date: Thu, 3 Aug 2000 21:49:22 -0600
X-Message-Number: 11

Rich:

The error counters can and will increment occasionally during normal use.
Errors do happen on the bus, usually do to the occasional unexpected reset or something. These errors should not cause the station to stop sending data. All I do is ignore that sample point in my averaging routines and continue normally.

One thing I ran into, but it has gone away was that my TNC was dropping out
of converstation mode for some reason and that was killing my transmissions. Going in and out of reporting mode put the TNC back into converstation mode. What annoys me is that I did nothing to make this problem go away so I am not able to debug it right now, but suspect the problem will come back. This is easy to test on your end by hooking up to the TNC with a computer and seeing if it has dropped out of conversation mode.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

END OF DIGEST

You are currently subscribed to wxsig as: kyle.ehler@lsil.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] Oops

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Fri, 4 Aug 2000 12:59:16 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100618-2000.08.04-13.06.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry, didn't mean for that to go to the group!

Jack

33. [wxsig] 1-Wire for sale... Sold

From: "Smith, Jack R SGT 658 QM CO" <Jack.Smith1@usarc-emh2.army.mil>
Date: Fri, 4 Aug 2000 15:17:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100641-2000.08.04-15.24.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

That didn't take long. Sorry folks, it's already sold.

Jack KE4LWT
[Attachment: Smith, Jack R SGT 658 QM CO.vcf; application/octet-stream; 400 bytes]

34. [wxsig] Stations on the air

From: William Beals <will@beals5.com>
Date: Fri, 4 Aug 2000 19:09:50 -0600

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100681-2000.08.04-20.27.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

As you get stations on the air and if you know you are covered by APRServe,
I would like to add your station to my list on the website. Rich, I'll add
yours shortly.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

35. [wxsig] Dropping out of Converstation Mode

From: William Beals <will@beals5.com>
Date: Fri, 4 Aug 2000 19:14:49 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100682-2000.08.04-20.27.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gerry:

I suspect my problem was dirty power. Most of my problems were with a
wire-wrapped board where I used 30-gauge wire-wrap wire for power as well.
 Most of my problems went away when I got my first PCB.

Another common mistake I make is that I still use my TNC for packet mail
and forget to re-initialize the TNC with the T238 after finishing the packe
mail.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

36. [wxsig] T-238 Assembly Problem

From: "james johnson" <wa6ozj@earthlink.net>
Date: Sat, 5 Aug 2000 19:15:4
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100908-2000.08.05-19.20.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,

Just finished putting the T-238 kit together...great work guys...all went
well till the last step! Instead of getting the banner message, all I get
is a 20x4 matrix of 5x7 dots!? (no characters). Has anyone else managed to
do this? Possibly someone could suggest what's missing in the way of data
or signals that could cause this.

Clueless.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] Re: T-238 Assembly Problem

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sat, 5 Aug 2000 21:37:37 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100914-2000.08.05-20.43.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Have you tried adjusting the pot? This controls there contrast level.

Just completed mine about 10 mins ago. Working good so far except that the
regulator run very hot when the display is plugged in.

Mark G7LTT, NYC

----- Original Message -----
From: "james johnson" <wa6ozj@earthlink.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, August 05, 2000 7:00 PM
Subject: [wxsig] T-238 Assembly Problem

> Hi All,
>
> Just finished putting the T-238 kit together...great work guys...all went
> well till the last step! Instead of getting the banner message, all I get
> is a 20x4 matrix of 5x7 dots!? (no characters). Has anyone else managed
to
> do this? Possibly someone could suggest what's missing in the way of data
> or signals that could cause this.
>
> Clueless.
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] Re: T-238 Assembly Problem

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sat, 5 Aug 2000 20:44:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100921-2000.08.05-20.53.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Are you sure you used pins 1 to 14 on the display?
----- Original Message -----
From: james johnson <wa6ozj@earthlink.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Saturday, August 05, 2000 7:00 PM
Subject: [wxsig] T-238 Assembly Problem

> Hi All,
>
> Just finished putting the T-238 kit together...great work guys...all went
> well till the last step! Instead of getting the banner message, all I get
> is a 20x4 matrix of 5x7 dots!? (no characters). Has anyone else managed
to
> do this? Possibly someone could suggest what's missing in the way of data
> or signals that could cause this.
>
> Clueless.
>
>
> ---

> You are currently subscribed to wxsig as: wn0x@earthlink.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] nothing-but-dots Matrix Display

From: William Beals <will@beals5.com>
Date: Sat, 5 Aug 2000 20:39:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100932-2000.08.05-21.45.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

James:

Marks and Riches suggestions are good ones. Hopefully Marks is correct, it
is much easier to fix!

If you are getting all the correct flashing of the LED on power-up, that is
a really good sign the micro is alive and well. If it is alive and well,
all that is left to look at for your problem is the wiring of the LCD
module or the adjustment pot. Don't forget to check ALL the connections
between the micro and LCD module, this includes bent pins on the micro,
soldering on the micro, T238 header, pot, cable, and LCD module header.

Lemme know if you are still having problems. Based on what you find, there
may need to be clarifications/additions to the manual.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Operating Instructions incorrect?

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 6 Aug 2000 10:49:14 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-100991-2000.08.06-09.54.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Folks,

I have downloaded the operating instructions for the T238 and I think I have
found an anomaly. The instructions say that if you have the rain gauge
connected you can select which id number is the rain gauge and which is the
wind gauge.

I dunno about you but I can't find any way of seeing the id numbers of the
devices and so am unable to select which one is which.

Could it be that I need to do a firwmare change?

I'm trying to avoid a trip to the roof to retrieve the 1-wire system as its
been installed there for over a year.

Also, resetting the clock each time the power goes out is a pain. Is there
any way of battery backing the clock or does it run in software?

And there's more ... If I'm using my TNC to do APRS with how do I connect
both the PC and the T238 to the TNC? I know that I could get the PC to pick
up the Peet on one com port and then feed it to the tnc on the other but I
want to send the weather data to my website which means that I can't run

both the com ports for APRS use.

Sorry for the mass of questions.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] Re: Operating Instructions incorrect?

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sun, 6 Aug 2000 09:15:06 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101000-2000.08.06-10.20.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

From: Mark Phillips <g7ltt@g7ltt.com>

> I have downloaded the operating instructions for the T238 and I think I
have
> found an anomaly. The instructions say that if you have the rain gauge
> connected you can select which id number is the rain gauge and which is
the
> wind gauge.
>
> I dunno about you but I can't find any way of seeing the id numbers of the
> devices and so am unable to select which one is which.

Just let it run for a short time and if the anemometer is turning and the
rain is increasing, then they are reversed and you can reverse them in the
software.

> I'm trying to avoid a trip to the roof to retrieve the 1-wire system as
its
> been installed there for over a year.

That is exactly the reason for the reversing capability that is in the
software.

> Also, resetting the clock each time the power goes out is a pain. Is there
> any way of battery backing the clock or does it run in software?

Yes, Will has developed software for a clock ibutton that is available from
Dallas Semi. I have ordered this item (DS1994), but it has not arrived yet.
Here's part of what Will put in the message to the group that announced this
feature:

All: I have started playing with my DS1994s. These are the cute little
ibuttons that have a real-time clock as well as 4Kbits of battery-backed
RAM. I got the basic routines to read the DS1994 time and set the T238
clock working today. They were a bit messy as the "real time clock" in the
DS1994 is 32-bit seconds counter since 1/1/1970. I had to convert that to
a regular date/time. Right now the T238 routines are read-only, I can't
think of a compelling to make them read/write. My biggest problem now is
that the DS1994 has only one timezone ,so I picked UTC.

Right now I do not do math for local time, I just set up another hours
register and incrment it in parallel. Since I have only one time counter in
the DS1994, I am going to have to have an arbitrary hours adder/subtractor
for local time. To handle all the carry-over is going to be a pain.

Can anyone think of a decent reason why I should be able to set the DS1994
time from the T238? For now I am assuming the person has a computer and
can set it there.

The main advantage of this feature is that if your power gets interrupted,
the T238 will read the time on power-up and resume operations without
needing your attention. It seems as though about a third of the time I
cycle power to the T238 I mess up the time and Russ emails me to tell me to
fix it.

> And there's more ... If I'm using my TNC to do APRS with how do I connect
> both the PC and the T238 to the TNC? I know that I could get the PC to

pick
> up the Peet on one com port and then feed it to the tnc on the other but I
> want to send the weather data to my website which means that I can't run
> both the com ports for APRS use.

I'm not sure that I understand what you mean here. Are you trying to run
both a Peet and a T238 at the same time?

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] Marks questions

From: William Beals <will@beals5.com>
Date: Sun, 6 Aug 2000 09:25:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101002-2000.08.06-10.27.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

On the rain vs wind speed IDs: This problem is a pain to deal with without
any prior knowledge, the sensors are exactly the same to the firmware. If
you have had the weather unit for a year, I assume you have had it plugged
into a PC. Doesn't the Dallas 1-wire weather software tell you which IDs
are for which sensor? If not the cheesy way of doing it is to just pick
one at random and see if the results make sense. On a dry day the rain
guage count would stay still while the wind speed would increment like mad,
even on a mostly calm day. I have been tinkering around with the idea of
just showing the counts during a setup screen to help with this.

On the Clock: I have some firmware that I am testing now that helps with
the clock. It is part of a bigger enhancement that does not need any
batteries. Dallas has a part called the DS1994 which contains a bunch of
RAM as well as a pseudo-real-time-clock in one of those little metal can
thingies. I am writing the code to not only have the weather station get
the time from that device on power-up, but also log the daily statistics on
the device so you can import them into your PC. These features will be in
the next release I hope. Of course, having a battery backup on the 12V to
the station would also solve the problem as well.

For both PC and T238 connections to the PC, for now I swap cables. This
means a little weather data gets lost when I do packet mail, but usually
not too much. If you want data in APRS format to go to the TNC as well as
Peet data to go to your website, I can't offer an easy solution. If you
could somehow get your PC software to accept APRS formatted data there is
nothing preventing you from sending that data to both the PC and TNC.
 Other than the initial setup of the TNC, the T238 is a pure broadcaster ot
data so you could make up a Y cable to just send the T238s data to the PC
with no return path. Is that possible with your setup?

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] Re: Operating Instructions incorrect?

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 6 Aug 2000 11:27:23 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101003-2000.08.06-10.33.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Just let it run for a short time and if the anemometer is turning and the
> rain is increasing, then they are reversed and you can reverse them in the
> software.

I've read that one can swap them over but I can't get it to show me the
sensors. When I try to setup the sensors it just tells me to disconnect the
rain gauge and then goes back to 'Display current data' option. How do I
select the right sensor?

> > I'm trying to avoid a trip to the roof to retrieve the 1-wire system as
> its
> > been installed there for over a year.
>
> That is exactly the reason for the reversing capability that is in the
> software.

Good idea!!

> > Also, resetting the clock each time the power goes out is a pain. Is
there
> > any way of battery backing the clock or does it run in software?
>
> Yes, Will has developed software for a clock ibutton that is available
from
> Dallas Semi. I have ordered this item (DS1994), but it has not arrived
yet.
> Here's part of what Will put in the message to the group that announced
this
> feature:

Looks like I'll be ordering that then.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] Re: Marks questions

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 6 Aug 2000 11:30:47 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101005-2000.08.06-10.36.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes the 1-wire software tells me which sensor is which so identifying it
isn't a problem. The problem is that I cannot get the T238 to show me the
sensors. When I go into wind/temp setup it just tells me to disconnect the
rain gauge.

Any ideas?

As for the PC thing. I think that I could make a Y cable with a few diode in
it so that both the PC and T238 could speak to the TNC. I can then use the
computer output on the T238 to feed my weather software 'Virtual Weather
Station' (http://www.ambientsoftware.com) to feed my website.

Mark

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, August 06, 2000 11:25 AM
Subject: [wxsig] Marks questions

> Mark:

>
> On the rain vs wind speed IDs: This problem is a pain to deal with
without
> any prior knowledge, the sensors are exactly the same to the firmware. If
> you have had the weather unit for a year, I assume you have had it plugged
> into a PC. Doesn't the Dallas 1-wire weather software tell you which IDs
> are for which sensor? If not the cheesy way of doing it is to just pick
> one at random and see if the results make sense. On a dry day the rain
> guage count would stay still while the wind speed would increment like
mad,
> even on a mostly calm day. I have been tinkering around with the idea of
> just showing the counts during a setup screen to help with this.
>
> On the Clock: I have some firmware that I am testing now that helps with
> the clock. It is part of a bigger enhancement that does not need any
> batteries. Dallas has a part called the DS1994 which contains a bunch of
> RAM as well as a pseudo-real-time-clock in one of those little metal can
> thingies. I am writing the code to not only have the weather station get
> the time from that device on power-up, but also log the daily statistics
on
> the device so you can import them into your PC. These features will be in
> the next release I hope. Of course, having a battery backup on the 12V to
> the station would also solve the problem as well.
>
> For both PC and T238 connections to the PC, for now I swap cables. This
> means a little weather data gets lost when I do packet mail, but usually
> not too much. If you want data in APRS format to go to the TNC as well as
> Peet data to go to your website, I can't offer an easy solution. If you
> could somehow get your PC software to accept APRS formatted data there is
> nothing preventing you from sending that data to both the PC and TNC.
> Other than the initial setup of the TNC, the T238 is a pure broadcaster
ot
> data so you could make up a Y cable to just send the T238s data to the PC
> with no return path. Is that possible with your setup?
>
> will
>
>
>
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> will@beals5.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] Re: Marks questions

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 6 Aug 2000 11:41:38 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101008-2000.08.06-10.47.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think I may have found the answer to my problem. The chip came with
V1,082r installed. Looking at Bill's site I see that the latest rev is
1.091R. I'll have a go at this when I've worked out how to program the
device.

Mark

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, August 06, 2000 11:30 AM
Subject: [wxsig] Re: Marks questions

> Yes the 1-wire software tells me which sensor is which so identifying it
> isn't a problem. The problem is that I cannot get the T238 to show me the
> sensors. When I go into wind/temp setup it just tells me to disconnect the
> rain gauge.
>
> Any ideas?
>
> As for the PC thing. I think that I could make a Y cable with a few diode
in
> it so that both the PC and T238 could speak to the TNC. I can then use the
> computer output on the T238 to feed my weather software 'Virtual Weather
> Station' (http://www.ambientsoftware.com) to feed my website.
>
> Mark
>
>
> ----- Original Message -----
> From: "William Beals" <will@beals5.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, August 06, 2000 11:25 AM
> Subject: [wxsig] Marks questions
>
>
> > Mark:
> >
> > On the rain vs wind speed IDs: This problem is a pain to deal with
> without
> > any prior knowledge, the sensors are exactly the same to the firmware.
If
> > you have had the weather unit for a year, I assume you have had it
plugged
> > into a PC. Doesn't the Dallas 1-wire weather software tell you which
IDs
> > are for which sensor? If not the cheesy way of doing it is to just pick
> > one at random and see if the results make sense. On a dry day the rain
> > guage count would stay still while the wind speed would increment like
> mad,
> > even on a mostly calm day. I have been tinkering around with the idea
of
> > just showing the counts during a setup screen to help with this.
> >
> > On the Clock: I have some firmware that I am testing now that helps
with
> > the clock. It is part of a bigger enhancement that does not need any
> > batteries. Dallas has a part called the DS1994 which contains a bunch
of
> > RAM as well as a pseudo-real-time-clock in one of those little metal can
> > thingies. I am writing the code to not only have the weather station
get
> > the time from that device on power-up, but also log the daily statistics
> on
> > the device so you can import them into your PC. These features will be
in
> > the next release I hope. Of course, having a battery backup on the 12V
to
> > the station would also solve the problem as well.
> >
> > For both PC and T238 connections to the PC, for now I swap cables. This
> > means a little weather data gets lost when I do packet mail, but usually
> > not too much. If you want data in APRS format to go to the TNC as well
as
> > Peet data to go to your website, I can't offer an easy solution. If you
> > could somehow get your PC software to accept APRS formatted data there
is
> > nothing preventing you from sending that data to both the PC and TNC.
> > Other than the initial setup of the TNC, the T238 is a pure broadcaster
> ot
> > data so you could make up a Y cable to just send the T238s data to the
PC
> > with no return path. Is that possible with your setup?
> >
> > will
> >
> >

> >
> >
> > --
> > This message sent using 100% recycled Electrons
> > (Minimum 30% post-consumer content)
> > --
> > Will Beals
> > will@beals5.com
> > 15014 East Idaho Place
> > Aurora, CO 80012-4740
> > 303-755-0293
> >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] Re: Marks questions

From: William Beals <will@beals5.com>
Date: Sun, 6 Aug 2000 15:49:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101047-2000.08.06-16.53.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

Hmm. I thought that Steve shipped version 1.09.1 with all the kits, I
guess it was the previous version. And yes, that is one of the major
differences betwee. 1.08.2 and 1.09.1, the ability to select sensor types.

On the PC cable, I don't think any diodes are needed. Connect the T238 Tx
signal to the Rx of both the TNC and PC. Connect the T238 Rx signal to the
Tx of the TNC. Most likley you will need to hook up the handshaking lines
on the PC to something nice to ensure it is happy too. There is nothing
that the T238 is expecting to see from the PC side, so there shouldn't be
any problems leaving the PCs Tx line unconnected.

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Sunday, August 06, 2000 9:42 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Marks questions

I think I may have found the answer to my problem. The chip came with
V1,082r installed. Looking at Bill's site I see that the latest rev is
1.091R. I'll have a go at this when I've worked out how to program the
device.

Mark

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, August 06, 2000 11:30 AM
Subject: [wxsig] Re: Marks questions

> Yes the 1-wire software tells me which sensor is which so identifying it
> isn't a problem. The problem is that I cannot get the T238 to show me the
> sensors. When I go into wind/temp setup it just tells me to disconnect
the

> rain gauge.
>
> Any ideas?
>
> As for the PC thing. I think that I could make a Y cable with a few diode
in
> it so that both the PC and T238 could speak to the TNC. I can then use
the
> computer output on the T238 to feed my weather software 'Virtual Weather
> Station' (http://www.ambientsoftware.com) to feed my website.
>
> Mark
>
>
> ----- Original Message -----
> From: "William Beals" <will@beals5.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, August 06, 2000 11:25 AM
> Subject: [wxsig] Marks questions
>
>
> > Mark:
> >
> > On the rain vs wind speed IDs: This problem is a pain to deal with
> without
> > any prior knowledge, the sensors are exactly the same to the firmware.
If
> > you have had the weather unit for a year, I assume you have had it
plugged
> > into a PC. Doesn't the Dallas 1-wire weather software tell you which
IDs
> > are for which sensor? If not the cheesy way of doing it is to just
pick
> > one at random and see if the results make sense. On a dry day the rain
> > guage count would stay still while the wind speed would increment like
> mad,
> > even on a mostly calm day. I have been tinkering around with the idea
of
> > just showing the counts during a setup screen to help with this.
> >
> > On the Clock: I have some firmware that I am testing now that helps
with
> > the clock. It is part of a bigger enhancement that does not need any
> > batteries. Dallas has a part called the DS1994 which contains a bunch
of
> > RAM as well as a pseudo-real-time-clock in one of those little metal
can
> > thingies. I am writing the code to not only have the weather station
get
> > the time from that device on power-up, but also log the daily
statistics
> on
> > the device so you can import them into your PC. These features will be
in
> > the next release I hope. Of course, having a battery backup on the 12V
to
> > the station would also solve the problem as well.
> >
> > For both PC and T238 connections to the PC, for now I swap cables.
 This
> > means a little weather data gets lost when I do packet mail, but
usually
> > not too much. If you want data in APRS format to go to the TNC as well
as
> > Peet data to go to your website, I can't offer an easy solution. If
you
> > could somehow get your PC software to accept APRS formatted data there
is
> > nothing preventing you from sending that data to both the PC and TNC.
> > Other than the initial setup of the TNC, the T238 is a pure
broadcaster
> ot
> > data so you could make up a Y cable to just send the T238s data to the
PC
> > with no return path. Is that possible with your setup?
> >
> > will
> >
> >

> >
> >
> > --
> > This message sent using 100% recycled Electrons
> > (Minimum 30% post-consumer content)
> > --
> > Will Beals
> > will@beals5.com
> > 15014 East Idaho Place
> > Aurora, CO 80012-4740
> > 303-755-0293
> >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(AH5`0:0" `$`````````!``$``0>0!@`(````Y 0````````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?`````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`@````4D4Z(%MW>'-I
M9UT@4F4Z($UA<FMS('%U97-T:6]N<P`5"P$%@ ,`#@```- '" `&``\`,0`3
M````. $!(( #``X```#0!P@`!@`/`"P`(@```$(!`0F `0`A````1C@U-48R
M135!1C9"1#0Q,4$X-38P,# P13@Y0C-#,#D`+@<!`Y &`/P.```A`````"P`"
M``$````+`",````````,`)@``````"P`I````````#`"X````````,`-@``````
M0 `Y`" (KBSP_[\!'@!P``$````@````4D4Z(%MW>'-I9UT@4F4Z($UA<FMS
M('%U97-T:6]N<P`"`7$``0```!8````!O__P+*;E\E7Y:Z\1U*A6``#HFSP)
M```>`!X,`0````4```!33510`````!X`'PP!````$ ````'=I;&Q 8F5A;',U
M+F-O;0`#``80V@48\0,`!Q"6#@``'@`($ $```!E````34%22SI(34U)5$A/
M54=(5%1(05135$5615-(25!0141615)324].,3 Y,5=)5$A!3$Q42$5+2513
M+$E'54534TE45T%35$A%4%)%5DE/55-615)324].04Y$6453+%1(051)4P``
M```"`0D0`0```. +``#<"P``,!<``$Q:1G6<);.J/P`*`0,!]P*D`^,"`&-H
MP0K <V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W
M:PN 9-HT#&!C`% +`V,`00M@P&YG,3 S,PNF!= Y"L!K.@JB"H0*@$AM`&TN
M("!)('1H60A@9V@%0!B 805 4X!T979E('-H!2!:< F (!F #Y!I`B @@#$N
M,#DN,2 #\'T8@" '0 ,@&( 9D!2P=/1S+!A19PI0!!$;,!L0OF$$(!NR$3 9
M<!IP=00@RQHU&#%!%- @>0>0'#";&0,$`" "(!F0;V8;H]4`P&H%L60&D&8$
MD GPZF,'D6(/L'<)X!@P&K'\."X18 !P&A :M!\B&9!7`: #$!LP>1AP;QF@
M9?YL!9 %0 ^@`( %L2/0&? T<RX72D\#H!NR4$-<(&,!H"10'#)D`B G^QCB
M"X!K(G$CX"#0!'$$('\*P!F0'] )@ F &#$(4&Z'`] D<1NR5#(S."I0XG@9
MH&EG;@= (_(;LKY2*L @`0;@&T$J(TXFL/\B@B:@*7\J@2O!*NPJL2 %8RRQ
M&#%-;W,%0".P:_LD4"/@>0A@&Q$;@2D2(_+E&)!O* !U<!NC#W 4T/49L&$4
ML6<PX1_0'Z(F5O\D`@-P#[ GT3/0`P`A4"/R_R2Q"' 9D!S1'Y$/<!G@(^*Z
M;Q@Q5!O -H($(&XL,<\SLAD#*B<?D65X&? D</\XHR02&9 #4B96`) !`!PP
MGR30&Z(HX1FP"&!L9">"UR&0*!,1,&\F\6T$("10_F$4<#BS)H($("JQ,_(R
ML/\A0"FT*5$72C&B%TH*]".P_#,V`4 5H % /<$98"1PH1!T,38@+4123P40
M%F<+@"LA31R186=E/T13%T9#9$,Q"Q-#9FDM&#$T- % ([ Q.##'`4 ,T$?S
M8B!&`V$7,/T,DF(6U":0&< ;@ 4@!" `6U--5% Z9S<J; ) 0$M3+@6@;5U?
M%T5)( 9@`C!)AU,_T&1T87D<,$$8L!W@!4 P#C8<, '02( @.3HT)1%A34Q7
M5&])AU1!X%!2(%=8!@`Z$0<Q[QA0`C A$3#!1P-@,L!,6!AU8FHD84F'6W=X
M92KA70?P93H6XP0@<?\<@3I `B /,$8/1QE"M NV_Q=3"N,*@!AB)^(88 #
M(^#_#W 9@0(03<$C- " (< D\?TD$&T]IQ@P-]$FP!G!)L&W!X ;$Q=$5B,0
M(C R!<#O"X PP!MQ*5),,H$SLADA^D(QL2<$( "0&6 843K"_SCG"V 98##!
M'9$?@1=$&K)D,5(8,$DG&X%:4V'O'& D$#D#'Y%W&\ #H&-@]1F!=P6P:QH!
```

```
M"& %0!B0_P?@) $]P0G 74 ;HA=$`0"_%' A4"5K%O(72D13($2N)T1$%T1)
M0R B2ALB(/H\2UT^%T10,6Q 4.]1^_MM,51C0".P,, E4 &0$3!Z+@6P9VY5
M3.--KTZV,?@Q.C,/T4^54U943U5?,1=*/B!9!Y$;LC$M_P/P/((@`"&P*-(9
M8!N !"#_75(9P ]@))9DHWM#)! [T?L", :0>3.R&S!XE@0`)X+_9 !<&SW%
M'X(9`QA@)M IP/\L,!Q@#[ J&"0"9B)=46<7_WCP)*0E4&]09.-D$@N ) 'K
M`_ 4T"\98&TRT ^A,L']'-%J3F)ZER0!(- $\"FX[WB69M +@!Q@81BP9_9N
M5=]X\!ZP(^ [T1T0/XC^!"#_`A D\325-7)C02>U@!8\TO<@866@8_%9)L0;
M%3KP!]'_*&,71 N!?:8D@2MB&2$L)^\FH2*"*F.-M',9\#.0+R=_,%* 8QNB
M`Z =X();3!%P_V7P6X%EX991-$:!=B$`&@&?6^$AP!D@-^%Y^"=6><#[A6 K
M(5>8I'B6&5 9(!IQ&"<@*!C0EM Z+R_Z=YPP+EU (Y!,\7H&3 +Z*9?<8F!R
MB.YHV(E6>)9O:=]J[WCP:_572H)FX4)O/F!ZP'#R,;% (9"DT37_;AEX\&[/
M;]]P[W'\FP%R[_]S_1/P3W>;`76N=N^@3WCAOY_$%S6Q`;"H)C6(0W9DL<<4
MP9-2&@%)1'-VP#?!_Q^1?VE^<8A2AK*DP5UY>/"_&R)EX;"H/80:< 7 :SA@
M_G=?`46 (R2#)2C#.? `T'QT;"/AN>)=0BM51\!R]FV=(UD59K"H,6):4P]P
M_UKDF)8_T!S1BZ)D`![P"L#_'#(=$#9@75&^"WUV"U 8L#]%@ LQL,:$4V0`
M+3-$;_<'D">$&9!$&W$=$7F5F)__>I(Q5'LR616T<+?I*.&+HOU[*C\802 0
M@+(;L@]@">#^<YAQ6B$@`2=@?31_TR00_873<#70H!:Q$1_"&2%FT/\4T#LA
M(H(ZP@:0LN0'D#S@/QP0C@0DHB'ALK)D`&1R_RA!6B&R]K"H''!K`HVQ`C#_
M96&3(P&0(^!5H1N!>R&.T?^^T[/(U 0+@ 4`7A!,\3#B\X*7`,!D++"H&7$#
MH!J!WV0`!& PP+LA)M!L.S"K<?\8,UI3(9!D\3I!9: %$%^B_U*!'L$;(QNR
MBB(71" `L*C?A=.!\CZ6TZ,$(&0(<5^B_X4U!/';0S)1)$ RT-R5! #WB.:R
M#QF00PD`S7"TD=K%_S4BO$> !F;B59(UDF8R&1+_X9)5];:Z>/#*\^0R&#(?
M<_\*L9<!(!!D`".0PK$%P GP_S,Q(5#7$QD#)V 'D8"R,?/[*"&PJ&(9(%(!
M")"#@<4&/P]PM:3J<=H17P'$Q%,Q^#DY-'L5/_$!D%ZAZL+W/]%=M=W*4D^
MP+'%X1N!:^]D#Z!U)V M"7 '0"W[.D '@"WI<UZ1'[@PL&&1_QLPNQ @40^P
M*R& @>B:,['[[H3F0W<%$#I$WV,!`"/R_X"R`B"[(5I3OMI>P56R%T1_@/'H
MG/5R.O;L0F>S-$)P^V8P!) M,L <,/(P?E%ZP/\D$ D`/K2K< ,0U)*;056A
M_F/(9_SVZ/;_=3PA,6*4HO\'< `0ZG$;L7_!A&($X0K0_RTS-]'V\9@0&2 V
M<;.2&X'O(9"0#ND4']!X8@(^4?;Q_=K!;QGPT2(@$(VQ#Y$<,/]:4> T[B39
M\.X@S7 RP315^#$R5EBD) #HG/RET_7[`/,DT&S[M7]F\^7B?[$1_D:_\9&S
MDDPIPU7"*T8FH/\<,+_BYQ)@P1T`71*.P>ZB_[3"L*CE,%M!8_'W)<7VJW#_
M2:" XCXQ,+)DU"=1M='-</^!`=@@U3 `E!W@F?&[(+"H]\JS-X @8'7+,.G"
M(! Q8]];0.Q1&@*(8:<14XN2V"!_'<)D$I/(\]98I//@L*A0_\M0'S4@EP9S
MGG4G(H"!)Y'_]I"8$, !T6"*0=21$*!E\/\/H1YGL*B3!>4A9B* \@9UZWGY
M9#%C->!P?E ?V4!1_R-U-^*0!<AI.&:XP-D".D/_!.+^T]#1C[ XMB.&D;^4
M0?^PJ-% F,.189<TTH#YX;:!_X5$]I,A0[FT.79^<0>QZN#_5H"^H(Z@S2":
MB$-PL*@9\_\$MHW(A7&.:,S6+Y*71]_A_R.59Q<IP+"HCP,68&(1!Z&___&8
ML>G"?_4`$**0:8['_P9SA4.*=N+ZI3)!?T-OXOK_HO-&#T<?2"^C&::1M-+E
M,*^BE-#1''(,$C%.\"5B$>QC>>EPUC%%\#"'8%: \Z^GL1$H33/!'B"DD'3@
M^TO /^%T];!5T<#QP #Q@OW7(2E%+U#?4>]2_TE:I#(/I*1"#*5YL*@Q-3 Q
M_?$`13;Q8U"K<+>@*;!AL#]GX+"HJ\#<,&;0`)!#3PP@.$N@#= M-#<T!C"P
MJ'3@,RTW-37@+3 R.3-$GUS?4$3ML*A9!/'&PF/@$.$0'R#_`?)UH.#Q0"#P
M0H2!J2+ L?_D<&UM27F!T-Q08)<[-.K1_\5 C1%^X!P!@;(*0>3@>:"%J2(M
M5Z W,#=-J6W_77^@C:$)>)=?CV"?8:]BN_]CKV2_9<]FWV?GB/MTBJ,7MVL_
M;$]M5G><@*3"0)8C_?;P<N3@5LAO3W!?<6]R?RMGYJ$$?2)0`'_P`P`0$ ``
M```#`!$0``````,`@!#_____0 `',(!$WX+O_[\!0 `(,(!$WX+O_[\!"P``
M@ @@!@``````P ```````$8``````X4````````#``* "" &``````# ````
M````1@`````0A0````````,`!8 (( 8``````, ```````!&`````%*%``"W
M#0```P`)@ @@!@``````P ```````$8``````84````````>`"* "" &````
M``# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````P ``
M`````$8`````#H4````````#`"> "" &``````# ````````1@`````1A0``
M``````,`*8 (( 8``````, ```````!&`````!B%`````````'@`X@ @@!@``
M````P ```````$8``````-H4```$````!`````````!X`.8 (( 8``````, `
M``````!&`````#>%```!`````0`````````>`#J "" &``````# ````````
M1@`````XA0```0````$`````````'@`]``$````%````4D4Z( `````#``TT
&_3<``'-3
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

47. [wxsig] Re: Marks questions

```
From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 6 Aug 2000 22:28:59 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101090-2000.08.06-21.34.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Hi Will et al,

I have managed to change the code in my T238 and I can now select which ID
is which. My problem now is that the unit does a number of tests and bounces
me back to the select ID bit again.

Looks like a trip to the roof after all.

Mark

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, August 06, 2000 5:49 PM
Subject: [wxsig] Re: Marks questions

> Mark:
>
> Hmm. I thought that Steve shipped version 1.09.1 with all the kits, I
> guess it was the previous version. And yes, that is one of the major
> differences betwee. 1.08.2 and 1.09.1, the ability to select sensor types.
>
> On the PC cable, I don't think any diodes are needed. Connect the T238 Tx
> signal to the Rx of both the TNC and PC. Connect the T238 Rx signal to
the
> Tx of the TNC. Most likley you will need to hook up the handshaking lines
> on the PC to something nice to ensure it is happy too. There is nothing
> that the T238 is expecting to see from the PC side, so there shouldn't be
> any problems leaving the PCs Tx line unconnected.
>
> will
>
> -----Original Message-----
> From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> Sent: Sunday, August 06, 2000 9:42 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: Marks questions
>
>
> I think I may have found the answer to my problem. The chip came with
> V1,082r installed. Looking at Bill's site I see that the latest rev is
> 1.091R. I'll have a go at this when I've worked out how to program the
> device.
>
> Mark
>
> ----- Original Message -----
> From: "Mark Phillips" <g7ltt@g7ltt.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, August 06, 2000 11:30 AM
> Subject: [wxsig] Re: Marks questions
>
>
> > Yes the 1-wire software tells me which sensor is which so identifying it
> > isn't a problem. The problem is that I cannot get the T238 to show me
the
> > sensors. When I go into wind/temp setup it just tells me to disconnect
> the
> > rain gauge.
> >
> > Any ideas?
> >
> > As for the PC thing. I think that I could make a Y cable with a few
diode
> in
> > it so that both the PC and T238 could speak to the TNC. I can then use
> the
> > computer output on the T238 to feed my weather software 'Virtual Weather
> > Station' (http://www.ambientsoftware.com) to feed my website.
> >
> > Mark
> >
> >
> > ----- Original Message -----
> > From: "William Beals" <will@beals5.com>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Sunday, August 06, 2000 11:25 AM
> > Subject: [wxsig] Marks questions
> >
> >
> > > Mark:
> > >
> > > On the rain vs wind speed IDs: This problem is a pain to deal with
> > without
> > > > any prior knowledge, the sensors are exactly the same to the firmware.
> If

> > > you have had the weather unit for a year, I assume you have had it
> plugged
> > > into a PC. Doesn't the Dallas 1-wire weather software tell you which
> IDs
> > > are for which sensor? If not the cheesy way of doing it is to just
> pick
> > > one at random and see if the results make sense. On a dry day the
rain
> > > guage count would stay still while the wind speed would increment like
> > mad,
> > > even on a mostly calm day. I have been tinkering around with the idea
> of
> > > just showing the counts during a setup screen to help with this.
> > >
> > > On the Clock: I have some firmware that I am testing now that helps
> with
> > > the clock. It is part of a bigger enhancement that does not need any
> > > batteries. Dallas has a part called the DS1994 which contains a bunch
> of
> > > RAM as well as a pseudo-real-time-clock in one of those little metal
> can
> > > thingies. I am writing the code to not only have the weather station
> get
> > > the time from that device on power-up, but also log the daily
> statistics
> > on
> > > the device so you can import them into your PC. These features will
be
> in
> > > the next release I hope. Of course, having a battery backup on the
12V
> to
> > > the station would also solve the problem as well.
> > >
> > > For both PC and T238 connections to the PC, for now I swap cables.
> This
> > > means a little weather data gets lost when I do packet mail, but
> usually
> > > not too much. If you want data in APRS format to go to the TNC as
well
> as
> > > Peet data to go to your website, I can't offer an easy solution. If
> you
> > > could somehow get your PC software to accept APRS formatted data there
> is
> > > nothing preventing you from sending that data to both the PC and TNC.
> > > Other than the initial setup of the TNC, the T238 is a pure
> broadcaster
> > ot
> > > data so you could make up a Y cable to just send the T238s data to the
> PC
> > > with no return path. Is that possible with your setup?
> > >
> > > will
> > >
> > >
> > >
> > >
> > > --
> > > This message sent using 100% recycled Electrons
> > > (Minimum 30% post-consumer content)
> > > --
> > > Will Beals
> > > will@beals5.com
> > > 15014 East Idaho Place
> > > Aurora, CO 80012-4740
> > > 303-755-0293
> > >
> > >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com

> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Re: Marks questions

From: William Beals <will@beals5.com>
Date: Sun, 6 Aug 2000 21:08:48 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101103-2000.08.06-22.16.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

I assume you are running into a problem where the the T238 runs into some
ID problems while spinning the wind vane. Right now I need to start the
whole calibration process all over again if I run into an error anywhere
along the way. I need to make this a bit friendlier. I will add this to
my to-do list. For now, be persistent. Errors during the wind direction
calibration process are legitimately unavoidable, so keep on trying, you'll
make it through.

Of course, after reading your email, I now realize your trip to the roof
may be referring to the general spinning of the wind vane to get the unit
calibrated. If that is the case, that is harder to avoid. My best advice
is after you do it once, go to the file WIREIDS.ASM and look at the
instructions on how to find and preserve your IDs so you will never have to
do it again.

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Sunday, August 06, 2000 8:29 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Marks questions

Hi Will et al,

I have managed to change the code in my T238 and I can now select which ID
is which. My problem now is that the unit does a number of tests and
bounces
me back to the select ID bit again.

Looks like a trip to the roof after all.

Mark

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, August 06, 2000 5:49 PM
Subject: [wxsig] Re: Marks questions

> Mark:
>
> Hmm. I thought that Steve shipped version 1.09.1 with all the kits, I
> guess it was the previous version. And yes, that is one of the major
> differences betwee. 1.08.2 and 1.09.1, the ability to select sensor
types.
>
> On the PC cable, I don't think any diodes are needed. Connect the T238
Tx
> signal to the Rx of both the TNC and PC. Connect the T238 Rx signal to
the
> Tx of the TNC. Most likley you will need to hook up the handshaking
lines
> on the PC to something nice to ensure it is happy too. There is nothing
> that the T238 is expecting to see from the PC side, so there shouldn't be
> any problems leaving the PCs Tx line unconnected.
>
> will
>
> -----Original Message-----
> From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> Sent: Sunday, August 06, 2000 9:42 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: Marks questions
>
>
> I think I may have found the answer to my problem. The chip came with
> V1,082r installed. Looking at Bill's site I see that the latest rev is
> 1.091R. I'll have a go at this when I've worked out how to program the
> device.
>
> Mark
>
> ----- Original Message -----
> From: "Mark Phillips" <g7ltt@g7ltt.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, August 06, 2000 11:30 AM
> Subject: [wxsig] Re: Marks questions
>
>
> > Yes the 1-wire software tells me which sensor is which so identifying
it
> > isn't a problem. The problem is that I cannot get the T238 to show me
the
> > sensors. When I go into wind/temp setup it just tells me to disconnect
> the
> > rain gauge.
> >
> > Any ideas?
> >
> > As for the PC thing. I think that I could make a Y cable with a few
diode
> in
> > it so that both the PC and T238 could speak to the TNC. I can then use
> the
> > computer output on the T238 to feed my weather software 'Virtual
Weather
> > Station' (http://www.ambientsoftware.com) to feed my website.
> >
> > Mark
> >
> >
> > ----- Original Message -----
> > From: "William Beals" <will@beals5.com>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Sunday, August 06, 2000 11:25 AM
> > Subject: [wxsig] Marks questions
> >
> >
> > > Mark:
> > >
> > > On the rain vs wind speed IDs: This problem is a pain to deal with
> > without
> > > any prior knowledge, the sensors are exactly the same to the
firmware.
> If
> > > you have had the weather unit for a year, I assume you have had it
> plugged

> > > into a PC. Doesn't the Dallas 1-wire weather software tell you which
> IDs
> > > are for which sensor? If not the cheesy way of doing it is to just
> pick
> > > one at random and see if the results make sense. On a dry day the
rain
> > > guage count would stay still while the wind speed would increment
like
> > mad,
> > > even on a mostly calm day. I have been tinkering around with the
idea
> of
> > > just showing the counts during a setup screen to help with this.
> > >
> > > On the Clock: I have some firmware that I am testing now that helps
> with
> > > the clock. It is part of a bigger enhancement that does not need any
> > > batteries. Dallas has a part called the DS1994 which contains a
bunch
> of
> > > RAM as well as a pseudo-real-time-clock in one of those little metal
> can
> > > thingies. I am writing the code to not only have the weather station
> get
> > > the time from that device on power-up, but also log the daily
> statistics
> > on
> > > the device so you can import them into your PC. These features will
be
> in
> > > the next release I hope. Of course, having a battery backup on the
12V
> to
> > > the station would also solve the problem as well.
> > >
> > > For both PC and T238 connections to the PC, for now I swap cables.
> This
> > > means a little weather data gets lost when I do packet mail, but
> usually
> > > not too much. If you want data in APRS format to go to the TNC as
well
> as
> > > Peet data to go to your website, I can't offer an easy solution. If
> you
> > > could somehow get your PC software to accept APRS formatted data
there
> is
> > > nothing preventing you from sending that data to both the PC and TNC.
> > > Other than the initial setup of the TNC, the T238 is a pure
> broadcaster
> > ot
> > > data so you could make up a Y cable to just send the T238s data to
the
> PC
> > > with no return path. Is that possible with your setup?
> > >
> > > will
> > >
> > >
> > >
> > >
> > > ---
> > > This message sent using 100% recycled Electrons
> > > (Minimum 30% post-consumer content)
> > > ---
> > > Will Beals
> > > will@beals5.com
> > > 15014 East Idaho Place
> > > Aurora, CO 80012-4740
> > > 303-755-0293
> > >
> > >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > > To unsubscribe send a blank email to
leave-wxsig-15067P@lists.tapr.org
> > >
> > >

> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@(#`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`@````4D4Z(%MW>'-I
M9UT@4F4Z($UA<FMS('%U97-T:6]N<P`5"P$%@ ,`#@```- '" `&`!4`" `P
M````,@$!(( #``X```#0!P@`!@`5``,`.0```#8!`0F `0`A````,C!",C)"
M-3E$0S9"1#0Q,4$X-38P,# P13@Y0C-#,#D`# <!`Y &`$@2```A````"P`"
M``$````+`",```````,`)@``````"P`I```````#`"X```````,`-@``````
M0 `Y`&#@;,X<`, !'@!P``$````@````4D4Z(%MW>'-I9UT@4F4Z($UA<FMS
M('%U97-T:6]N<P`"`7$``0```!8````!P `<SFQ9*[(A:]P1U*A6``#HFSP)
M```>`!X,`0````4```!33510`````!X`'PP!````$ ```'=I;&Q 8F5A;',U
M+F-O;0`#``808W&<Z0,`!Q!O% ``'@`($ $```!E````34%22SI)05-354U%
M64]505)%4E5.3DE.1TE.5$]!4%)/0DQ%35=(15)%5$A%5$A%5#(S.%)53E-)
M3E1/4T]-14E$4%)/0DQ%35-72$E,15-024Y.24Y'5$A%5TE.1%9!3D5220``
M```"`0D0`0```"D/```E#P``&B$``$Q:1G6CFH\B/P`*`0,!]P*D`^,"`&-H
MP0K <V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W
M:PN 9-HT#&!C`% +`V,`00M@P&YG,3 S,PNF!= Y"L!K.@JB"H0*@$D@RF$$
M$'4'@"!Y"& 8$&$)<"!R=6X#`!8`(*D+@'1O&! @$3!O`F!@96T@=V@$D!AP
M=,,:D!K35#(S.!D"!"#-&9-S`W 8<$E$&?8$(.<:@ ,0&'!S< N &4,:XA,#
M\!30('8`<&4N()$'\&EG: 5 ;F\'X/\8`!\`"8 :T!PQ`9 `(!Y$%F@&\!AP
M8P= :6)RV&%T:0(@&?)C!Y $(+,'0 ,@;W8$D!@09PMQ_1F 9A_A&1$9A0.@
M!) #8'DC06YY&H0'0 (@'C5A[GD?(1_X`,!K&L($`!G1_&)I!4 #4 B0%- A
ML 20YR:3`_ BX6%D($$GPB<R\GD@42UD&< AL""0'R&V1@6Q'[$L*! 8<' $
MD&\`D""0"? K(D4DX@0@9-,(<1XJ9&D)<&,B`R&?=R*B&.$:0&<H, =P(?!E
M!FPJ<!D@879O:6OO`: :0"O0'% @)X!E<.,C``.@=')Y&5$KT!B1OB<BX2=C
M*#$:X -@=1]P^BX72D\CT 6@"' /H"O0_F$!@",Q"7 IH!E2&)$%P/L:4 MP
M;"O0'_$?P3:1+R#^>AAS!< RT 4@(%(:X@-@OF\CT # *G K\0EP9B31^QX3
M.61G"? $D = ';@YX?\>6R!2.Y @U!D@*#$O!@F _R:2/+(A\!F *A$:\2\`
M-?*_/[8/<02!(%(Q<Q\A33HR_R"0*9$4<"* /_(V-!B2*L%O*#$"("* *]!G
M.6$Y9&8A'8)725)%'*!3+CA!4TTDD1[ "0!O:_\8$"#4"X @D!D0+J,$("(A
M_R% !^ 9L460'K%&HA$P!Y#_!) C(#<$'* $(#(A&)(I4_\?`",B#W!*`1FQ
M1#0C8S2[SRE2%TH*]"\@,S8!0!6@'P% &@$L@"Z@$'0Q-B!Z+5#B3P40,* Q
M8 ,@3?LBD2-@95#C%T9/]$_!"Q/!3_9I+3$T- % +R"X,3@P`4 ,T%2#8BM0
MEP-A%S ,DF(6U"!0'7$5+R!P!"!;1G!44#JH9S=L`D! 5^,N!:!\;5T7156P
M!F ",%874ZL9(#&P>2O0032 =4+!'# V*] !T%40(#@ZE#(Y5N!-6.=4;U87
```

```
MT%1!4%)%T%@&`"P@OF,',1R0`C :H4+!1S1A8G!8Z'5B:BZ15A=;)'=X`)!G
M70?P93K[%N,$('$*4""02")2CU.:GT]$"[874PKC"H!(:470]REB/?$'0"P7
M3$OC`X%2`?\@0P]A%@`:Q 6@`0`9@2I2_QMC1J(8`"\``Z ?L@^@&D#_+J =
M4@]@')$71"?1:\,?(/]"<1H&'[) `T<U/F,JP >1_1G@;AA0*_ %P#RB0K$B
ML;\>L0;@&2 B@1=$&&%B`- _1Q Y56M5'*$H(DS/"DS_1O$$("\@)X$9X#D/
M-C0BT>\TNQ;R%TI0XR!1/E#4%T2Y5=,@(F8R!S :8$(X0=!S(B \*5) *_!\
M(?HU6)(^%T1<P7M@77]>B\M\4F$"0"KR<RX!D!$P>BX%L&=]=5ES6C];1C5\
M.C1;^%_F8-]A[Q=*/L<6ZGUUB !(;6TFDQK@MS1R(-(_T5,L@$H!<QUP'G L
M(![!+#(B(3$N,/@Y+C$>@1K@(L,:XA2P_W" -[&'IEK@(I(H,29@0!2_2:$4
M< A@!""+E1\A01ZQ?GD'D$"X`B 8<#RE`,!J?P6PAZ8N8 $@&J%Q(BOA=,YW
M"> ?((P1."X18$:BWXP40+(EH2@@+R!T*G)K1G\/H " !;&6$"P@@."(?4_S
M,K$:\5!#+O$QTQ@`*L#\;B<@T@N 1Q$E0"Y1!'%_,"0@$C\S"% 9,&N"&R=4
MGGB'IH5A48(Y55)X/)+W!N",H1LC3ID@1J*9$)OO_QN!GJ&=QQ=$&N&'IIT@
M/);[GY%"0F]"P741&D J<$KYOR T(4!'`5\P&M-HT62+$/\G<!E2+R ?`&*%
MB `RHICD_QPEFC(9< ,`0S$9L9;Q"'"O,_-!(XM *G)O'R%4&I-_)]$?L*ES
MAZ9N9QMC)]%E_GA^P2(`.O0/H$5Q`V&8QG\`D $`,@,:X1CABQ (8&S^9)GR
M*_"'IIJ2'-<:0#%P_QX6F1 $(*-!IY(Q006@G#/_/S&(?4WHB-=0[U']B ![
M%+]6KU>_6,:(`('_6OLY@^#_$6%<):,A??%^/UZ/O*.$O_^%SZ?6B'V)PII2
M& `Z$DOC_P(0O5&5= " E !!HRIA&@7_'R"KX6BQ.2$O`!AAC(*'IO96E5"4
M<#(%P$>B(M$_,M=TLAE2/]%"*6$G2J$H,+\<@:\S;F<+8'!2-H%V/_'3AZ:,
M$C%2'R!),X)+XW\9X$3Q1S-LHPGPT!%*`7?_!; G@![ "& %0$BE&@$)P/][
MT:*9`0!#$I>N=_BW''E/^WI:N:8BNBM\4;MMB-=][Q_ OX /@1R\SUK=,3$Z
M_C,/T;\GPE_#;\1_A[6(`.99!Y$:XC$M`_"Q`CG@_Y/P&-(Q`7PP)U A$FOB
MEN7_;*8R$K!1`C &D#+R- 'F>/\$`)GR&>?)!!H&;C9JLZQQ_SW7&V,<(DBB
M!X"B/YVAEO._WT!%T-&C1.(9DQZ2+RR WFTR@ ^AIF$H,6I:\NB7_TPR! "T
MY:SH\0DAX".1(W#_-(#4U^;@YGB0@"IPL%$8(/X_^!_Y(00@`A XX:BEJ8*_
MT &:)>XVL5(G5!G@69DT_XQU*% 'T!=$FM.'I@N!ZZC_EL$Y8C_1GP>9$4:B
M&V/]5/\=P#:@<B>CXVJT&N$NX%KP]Z*W\.M8H7#2L&_RTK '$?^H5N^6DT @
M,2IAE `A\!J1N>?X)U;GP//P.^%7"63'YGB*L"'S)R H'X 'D- Z+R]W#1 N
M>] H(-<LD>@&6)(I")QBS1+X#__FX=7I^(GF>-<?V"_FTGL?_WPOVWO<+]T_
MWD_?7PO2X(_YX9TR-;\)XS_D0.2O$6^_YH>(#"-2(NJ8I?=C=FRQ_RXB`Y&+
M84J!Y("KT4-A[8G_]'W<DPR.$')^[92B>+KB?>R5B^ =M!K;?'+H3N0E63O
M\;4P,ZYP<@!T,2%R<\G"V44G<FT.`\5W9B+J0_+_2^/N0,=D"58^8_M"[)"0
MMP']/`#>RCN"J<''!,2OK>'!^;(H0:%$BZO+C[)"@$T3W;U&9]$H01(S1CN'G
ME0E?_^B22N1KTL5W2I JJ[$!^T+]Z2H_/V/NTD S;L!O8 DQ_\:A<"%O0.LT
M;B/0\/1B-4?_0R 1..;AD9+,<=.0'4"OH?]&HJ]"DR!U]&]@L6!P@?VSSY;B
ME"&8DNR09'*:L<:A_P87]V(BZHY >B+]4?+PTB'_`U-6,&H`(6&,X6O!_G$Q
M\_<F:$BD]X!CDV!QP$AQ=1+[YGB20&1FU2-$BM'WD*AAW>R0;:11+@'^0&P6
M,!U1_XF39\.3T/)AKL'28!-PS$+_&F&0D?ZC;K+Y@J?G,%OT8^_P$K.&2$-O
M<&2J@,PS\\7_]9"38% RI?%RP,F0474;0,</R"2/;K)#;&]R$"<Q_V>EJ3(O
M)^XFTZ)B(JFBTO+_[D)6LL\7*5SV<\F@69*)DO^10V.1!\%V<7-!-?%VT)-P
M_VC1J?!+LZUC;T/NTJ63FI'_(NIQ\ RP4*&7@3>1.(3N0!\H1& 13O'+H3@D
M4S$Y_#DT:[6TX<MPRT%@8G$1^RF'4LQ2OQ ST3E!C.%E)+4%<'5O0"V38(S0
M+0PP_7' +5\3\M&1B*10SC&JP/].L)(AJ6",T(>F[J%>'.LQ^V1$6Z-W$W"N
MQ%2#ZL">(O_NTJA@+@%:(S'ZRV$,,HW'?ZE@7AYK<J]V8>+4DZA2</OP,(N@
M+?0`L(!G\.QQ].#_T/!9D+.D'5"5X&,7<S,A8?YC.^ESB%Z6=D4!8312!-+_
M:X!VX& 1,?'MX?+R-%%@X/^@$ZOA;/&30,QPJH$F,K:6[['81PPQ\J"0>,ZB
MLT%L\?U:`6^7<$52GN#]48NPF8'_6B%55&/D3M!CX%] ] &H9/'6E#$R5JSG
MHB5>>',U]TB5=\.I,&QR1>V&:>57G_TC-4;IP0'C`GR<,R&"GB;_F1"P@/M"
M7'+-83] R9+^8?]7B"=3(NI:D,?!-S%M)3E6_QU0RW#O`K,AI%+1E)G!*''_
M7T#O(?VPI5!W8]:6!6 *L=]XR.;2/E.KD,: =<E@7V)_GN"E`\? 8?&3<O>!
M&-%3__LR_;"7PM#2`_@ST=:4:A+[L?<[ZU!0()DUFI=]\P]5_S.B[J&QH:-P
M_Q S(?>0^:'_23&)0-*P#$&88]:6-%$BZG\#-:E!TN+O$GWUY_G0\6/]J?!P
MX:"9V;5!G@6K\H!'_SOKK'7(@4WBKL,T4J^#10'_]7"SDV'BGB4![P1Q(NHE
M4/\)@\W!!_3W@'!Q&9'SU&R3OYM#+)2-0R@T?S'6EF)1$/\QP/Y X9 +2@'P
M(NJ38WPV__UH] '^"$!UJN,(!U4!GB7_!AFDX"+J_J-<<,ZQ?R%VP=\)<5]B
M[A5VX!00:?YG??/_\]/YV"+,?XB^3L!/OD\4<__#7\1OQ7\4FQA1T5):D!04
MKT4!X: %8(0B,1YP)<ZQ[&-Y7Q!*T47L\" 041#S(:GFX2A-KT&8(!8PXH#[
MR3"\471KL"&1-!%@X&="_1S1*<)?SF_/?]"/QHX5T@\61+Z>%QDBZC$U,#']
M9L!%LN$F\!U0@M#:`#B@/V%0(NH=H%$00M LD$-/#" X'G"&,"TT-S0&,"+J
MXH S+3<U-> M,#(Y,\&OVP_-?.TBZEDT80HB8W\P?T#R\/\N`30`#W!+@+R0
M9@+S$>0"DS/1Y(!G-T1P=$#A`__4OAAP,J'?A[=D8'$XH/RQ?^T`E7&:XH)1
M3^#GH!KB+>'5L#<P-TT;+=P/W&S_Z'_=7=YOWW_@C^&>XK_CS__DW^7OYOGS
MGO2\W6KK#^P?;>TF=PU@%F) !N,%<'+_3^#4NN\_\$_Q7_)OYO?_J_\`BM#?
M`J\#OP3/T6P4B <*__4?]B_W/_A/[9_ZW_OO_/___@__'P`O`3CIE G?"N_X
M[__Y_T; #>\._Q /$1_F]NF4"GU&P `>D ````,`$! ``````P`1$ `````#
M`( 0_____T `!S"@K7P@' # `4 `"#"@K7P@' # `0L``( (( 8`````, `
M``````!&``````.%`````````P`"@ @@!@``````P ```````$8`````$(4`
M```````#``6 "" &``````# ````````1@````!2A0``MPT```,`"8 (( 8`
M`````, ```````!&``````&%`````````'@`B@ @@!@``````P ```````$8`
M````5(4```$````$````."XP``L`)H (( 8``````, ```````!&``````Z%
M`````````P`G@ @@!@``````P ```````$8`````$84````````#`"F "" &
M``````# ````````1@`````8A0```````!X`.( (( 8``````, ```````!&
M`````#:%```!`````0`````````>`#F "" &``````# ````````1@`````W
MMA0```0````$`````````'@`Z@ @@!@``````P ```````$8``````.(4```$`
H```!`````````!X`/0`!````!0```%)%.B ``````P`--/TW``!'!H4`
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] 1.10.0 Release

From: William Beals <will@beals5.com>
Date: Sun, 6 Aug 2000 21:14:52 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101104-2000.08.06-22.16.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Release 1.10.0 is now up. Russ found a good bug in it before I released
it, saving me some embarassment. Major features are:

1) T238 can now read time from a DS1994 real-time clock.
2) Found and fixed a hole in the wind sensing routines that gave bad data.
3) Now the LCD should come up OK in debug mode (need **full** download to
get this feature).
4) Now handle removal of rain guage (for winter) more gracefully.

Note: To use the DS1994, you must set the time using your PC. When you
do, you must set the DS1994 to GMT, not local time. After "booting up"
with the DS1994 for the first time, re-run the time-set routines to enter
the correct local time. After that I store the correct offset and you
should never have to re-enter the time again.

Also, starting with 1.10.0, I have moved the LCD version string to the
"Display Current Data" menu page instead of after you start displaying
data. Hopefully this is more convenient to find.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] RE: 1.10.0 Release

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 7 Aug 2000 00:25:18 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "William Beals" <will@beals5.com>
Message-ID: <LYR15067-101116-2000.08.06-23.32.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK Will, I just ordered a pair of 1994s, what did you use to mount it? I
ordered the mounting clip #9094. I assume it will just hang on the one
wire buss and can be connected via "blue wire: additions from a spot on
the expansion area.

Russ and Steve , I have begun collecting parts etc to build barebones
T-238 ... any suggestions on the CPU. I am not sure how to get it
programmed from scratch. How do get he loader into it? or does come with
the loader already in memory?

All ... yahoooooo, I think my rain gage may finally be ready and
calibrated correctly. Been running it just on the PC for the last few
days. Time to go for real ... maybe tomorrow ... after the dentist
(ugh!)

 73 de brian
--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of William Beals
> Sent: Sunday, August 06, 2000 11:15 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] 1.10.0 Release
>
>
> Folks:
>
> Release 1.10.0 is now up. Russ found a good bug in it before
> I released
> it, saving me some embarassment. Major features are:
>
> 1) T238 can now read time from a DS1994 real-time clock.
> 2) Found and fixed a hole in the wind sensing routines that
> gave bad data.
> 3) Now the LCD should come up OK in debug mode (need **full**
> download to
> get this feature).
> 4) Now handle removal of rain guage (for winter) more gracefully.
>
> Note: To use the DS1994, you must set the time using your
> PC. When you
> do, you must set the DS1994 to GMT, not local time. After
> "booting up"
> with the DS1994 for the first time, re-run the time-set
> routines to enter
> the correct local time. After that I store the correct
> offset and you
> should never have to re-enter the time again.
>
> Also, starting with 1.10.0, I have moved the LCD version
> string to the
> "Display Current Data" menu page instead of after you start
> displaying
> data. Hopefully this is more convenient to find.
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> will@beals5.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] For Sale - One Wire Weather station

From: "Chuck Gooden" <chgooden@worldnet.att.net>
Date: Mon, 7 Aug 2000 01:08:58 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101146-2000.08.07-01.15.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a one wire weather station for sale. This is the basic one
wire kit consisting of temperature, wind speed and direction. At
present the kit is unassembled.

I have slightly modified the kit by gluing a sensor from a bicycle
computer into the housing. The idea was to provide a means to obtain
the average and max wind speeds without a PC. Please note this is

only a mehanical modification only and no holes were made in the
housing.

The first person to reply to this email and send me a check for
$80.00 will get the one wire weather station and bicycle computer.

Chuck Gooden N9QBT
Rockford, IL

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Re: 1.10.0 Release

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Mon, 7 Aug 2000 06:39:41 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101152-2000.08.07-05.45.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Damn!!

Just as I had worked out how to upgrade and did it he goes and brings out
another version. Oh well.

I am ordering another temp button and the DS1994 but I'm confused as to how
to connect them to the bus. do I simply solder a wire on the top and bottom
of the button and connect it to the bus?

Mark, G7LTT (sorry if I seem to be consuming the list)

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, August 06, 2000 11:14 PM
Subject: [wxsig] 1.10.0 Release

> Folks:
>
> Release 1.10.0 is now up. Russ found a good bug in it before I released
> it, saving me some embarassment. Major features are:
>
> 1) T238 can now read time from a DS1994 real-time clock.
> 2) Found and fixed a hole in the wind sensing routines that gave bad data.
> 3) Now the LCD should come up OK in debug mode (need **full** download to
> get this feature).
> 4) Now handle removal of rain guage (for winter) more gracefully.
>
> Note: To use the DS1994, you must set the time using your PC. When you
> do, you must set the DS1994 to GMT, not local time. After "booting up"
> with the DS1994 for the first time, re-run the time-set routines to enter
> the correct local time. After that I store the correct offset and you
> should never have to re-enter the time again.
>
> Also, starting with 1.10.0, I have moved the LCD version string to the
> "Display Current Data" menu page instead of after you start displaying
> data. Hopefully this is more convenient to find.
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> will@beals5.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Re: For Sale - One Wire Weather station

From: "Byron Lichtenwalner" <w3wkr@ptd.net>
Date: Mon, 7 Aug 2000 10:24:20 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101183-2000.08.07-09.34.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Chuck
I will buy your 1 wire weather station.
Respond to me at w3wkr@ptd.net
Byron

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Re: Hot 7805

From: Anson Mount <amount@execpc.com>
Date: Mon, 07 Aug 2000 10:16:32 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101187-2000.08.07-10.22.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Excellent idea...that is how the Kantronics KAM's 7805 is cooled...its attached
right to the box.

Anson / N9RJX

Gerry Creager N5JXS wrote:

> Russ Chadwick wrote:
> >
> > ----- Original Message -----
> > From: Rich Beckwith <wn0x@earthlink.net>
> >
> > > My 7805 is getting very hot when the backlight is plugged in. Is anyone
> > > else experiencing the same thing?
> > >
> > The same thing happens with mine. I did install a dropping resistor (47
> > ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
> > across the regulator. I generally don't leave the backlight on for long
> > periods. However, I have inadvertently left it on overnight without a
> > meltdown.
>
> Forgive me since I've not got the kit (and it sounds like there won't be
> any available)... how is the 7805 heat-sunk? If there's not a heat-sink
> on it, even a little clip-on makes a good addition to get things cooler:
> the thermal mass for dissipation on those regulators is certainly
> lacking. If there's a metal structure (box, etc) that it can be
> attached to, that'd help. I've fried several 7805's that were
> theoretically within dissipation limits until I started adding extra
> heat-sink thermal mass.
>
> Hope I'm not too far off in left field!
>
> 73, gerry
> ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
> They're real close together and one's more a test site, but they'll be
> up.
> --
> Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
> Network Engineering |Research focusing on
> Computer Science Department |Satellite Geodesy and
> Texas A&M University |Geodetic Control
> 979.458.4020 (Phone) -- 979.847.8578 (Fax)
>
> ---
> You are currently subscribed to wxsig as: amount@execpc.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] Re: Hot 7805

From: Mark Phillips <Mark.Phillips@royalblue.com>
Date: Mon, 7 Aug 2000 11:25:39 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101190-2000.08.07-10.30.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

So I'm kinda getting the idea that the light is the only thing that needs
the 5v feed from J2. Would this be correct? If so I'll install a switch on
mine as I sometimes have guests sleeping in the room where all the stuff is
and the light would be a pain.

Mark

-----Original Message-----
From: bounce-wxsig-19302@lists.tapr.org
[mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Anson Mount
Sent: Monday, August 07, 2000 11:17 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Hot 7805

Excellent idea...that is how the Kantronics KAM's 7805 is cooled...its
attached
right to the box.

Anson / N9RJX

Gerry Creager N5JXS wrote:

> Russ Chadwick wrote:
> >
> > ----- Original Message -----
> > From: Rich Beckwith <wn0x@earthlink.net>
> >
> > > My 7805 is getting very hot when the backlight is plugged in. Is
anyone
> > > else experiencing the same thing?
> > >
> > The same thing happens with mine. I did install a dropping resistor
(47
> > ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
> > across the regulator. I generally don't leave the backlight on for long
> > periods. However, I have inadvertently left it on overnight without a
> > meltdown.
>
> Forgive me since I've not got the kit (and it sounds like there won't be
> any available)... how is the 7805 heat-sunk? If there's not a heat-sink
> on it, even a little clip-on makes a good addition to get things cooler:
> the thermal mass for dissipation on those regulators is certainly
> lacking. If there's a metal structure (box, etc) that it can be
> attached to, that'd help. I've fried several 7805's that were
> theoretically within dissipation limits until I started adding extra
> heat-sink thermal mass.
>
> Hope I'm not too far off in left field!
>
> 73, gerry
> ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
> They're real close together and one's more a test site, but they'll be
> up.
> --
> Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
> Network Engineering |Research focusing on
> Computer Science Department |Satellite Geodesy and
> Texas A&M University |Geodetic Control
> 979.458.4020 (Phone) -- 979.847.8578 (Fax)
>
> ---
> You are currently subscribed to wxsig as: amount@execpc.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: g7ltt@g7ltt.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

****
This message is intended only for the stated addressee(s) and may
be confidential. Access to this email by anyone else is unauthorised.
Any opinions expressed in this email do not necessarily reflect the
opinions of royalblue. Any unauthorised disclosure, use or
dissemination, either whole or in part is prohibited. If you are
not the intended recipient of this message, please notify the sender
immediately.
****

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] Temp Shield

From: Doug <dbuhrman@radiks.net>
Date: Mon, 07 Aug 2000 12:33:32 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101235-2000.08.07-13.39.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I found the following materials at the local hardware store and had a shield for my temp sensor built in less than an hour. I used a 3 inch vent cover for a gas water heater fits (a bit loose) around a 2.5 inch to .75 inch PVC reducer. I happened to have some adhesive backed foam strips that I attached to the outside wall of the PVC reducer. That made the vent cover fit very snug on the PVC reducer. The reducer now threads on to a piece of .75 inch pipe. The temp sensor sits on top of the .75 inch pipe up inside the vent cover. Out of the sun and rain and plenty of air flow. Hope this description made some sense.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] RE: Temp Shield

From: Mark Phillips <Mark.Phillips@royalblue.com>
Date: Mon, 7 Aug 2000 14:39:07 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101236-2000.08.07-13.44.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Got a camera? MAybe you could do a web page with the design?

Mark

-----Original Message-----
From: bounce-wxsig-19302@lists.tapr.org
[mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Doug
Sent: Monday, August 07, 2000 2:34 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Temp Shield

I found the following materials at the local hardware store and had a shield for my temp sensor built in less than an hour. I used a 3 inch vent cover for a gas water heater fits (a bit loose) around a 2.5 inch to .75 inch PVC reducer. I happened to have some adhesive backed foam strips that I attached to the outside wall of the PVC reducer. That made the vent cover fit very snug on the PVC reducer. The reducer now threads on to a piece of .75 inch pipe. The temp sensor sits on top of the .75 inch pipe up inside the vent cover. Out of the sun and rain and plenty of air flow. Hope this description made some sense.

Doug K0DSP

You are currently subscribed to wxsig as: g7ltt@g7ltt.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

****
This message is intended only for the stated addressee(s) and may
be confidential. Access to this email by anyone else is unauthorised.
Any opinions expressed in this email do not necessarily reflect the
opinions of royalblue. Any unauthorised disclosure, use or
dissemination, either whole or in part is prohibited. If you are
not the intended recipient of this message, please notify the sender
immediately.
****

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

58. [wxsig] Re: Temp Shield

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Mon, 07 Aug 2000 13:53:43 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101248-2000.08.07-13.57.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Have a picture?

>>> dbuhrman@radiks.net 08/07/00 01:33PM >>>
I found the following materials at the local hardware store and had a shield for my temp sensor built in less than an hour. I used a 3 inch vent cover for a gas water heater fits (a bit loose) around a 2.5 inch to .75 inch PVC reducer. I happened to have some adhesive backed foam strips that I attached to the outside wall of the PVC reducer. That made the vent cover fit very snug on the PVC reducer. The reducer now threads on to a piece of .75 inch pipe. The temp sensor sits on top of the .75 inch pipe up inside the vent cover. Out of the sun and rain and plenty of air flow. Hope this description made some sense.

Doug K0DSP

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

59. [wxsig] RE: Temp Shield

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 7 Aug 2000 15:53:12 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101276-2000.08.07-14.59.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Or email me the picture and I will add it to the stuff I already have
posted re: the T-238 at <http://www.wulfden.org> and follow the ham
radio link.

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Mark Phillips
> Sent: Monday, August 07, 2000 2:39 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Temp Shield
>
>
> Got a camera? MAybe you could do a web page with the design?
>
> Mark
>

> -----Original Message-----
> From: bounce-wxsig-19302@lists.tapr.org
> [mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Doug
> Sent: Monday, August 07, 2000 2:34 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Temp Shield
>
>
> I found the following materials at the local hardware store
> and had a shield
> for my temp sensor
> built in less than an hour. I used a 3 inch vent cover for a
> gas water
> heater fits (a bit loose)
> around a 2.5 inch to .75 inch PVC reducer. I happened to have some
> adhesive backed foam strips
> that I attached to the outside wall of the PVC reducer. That
> made the vent
> cover fit very snug on
> the PVC reducer. The reducer now threads on to a piece of
> .75 inch pipe.
> The temp sensor sits on
> top of the .75 inch pipe up inside the vent cover. Out of
> the sun and rain
> and plenty of air flow.
> Hope this description made some sense.
>
> Doug K0DSP
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
>
> **
> *****************
> This message is intended only for the stated addressee(s) and may
> be confidential. Access to this email by anyone else is unauthorised.
> Any opinions expressed in this email do not necessarily reflect the
> opinions of royalblue. Any unauthorised disclosure, use or
> dissemination, either whole or in part is prohibited. If you are
> not the intended recipient of this message, please notify the sender
> immediately.
> **
> *****************
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] Re: nothing-but-dots Matrix Display

From: "james johnson" <wa6ozj@earthlink.net>
Date: Mon, 7 Aug 2000 20:11:47
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101355-2000.08.07-20.17.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

Thanks for the support...it worked! Turns out it was a combination of
problems. 1)I had one cold solder joint in one of the display data lines,
and 2)I did have the contrast set wrong. Both now fixed, and it all works
fine. I did notice the regulator heat sink does get quite warm...I recall
someone else commenting on that too. I haven't had a chance to run it for
any length of time, so don't know if the reg heating is normal, dangerous,
or just the way things are.

Also, I saw the notice that Dallas had run out of senors...to bad. It would
be nice if they could had gone on a while longer, as I have some other
folks interested too...oh well.

Thanks again for the help and the speedy response!

73, Jim

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] 1994 connections, micros, etc

From: William Beals <will@beals5.com>
Date: Mon, 7 Aug 2000 21:04:23 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101372-2000.08.07-22.57.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

All: Ugh! I need to learn that not everyone has been in on the long history of this project and I need to be more complete when I describe things.

All: When I say the code is released, that means I put it on the website http://www.beals5.com/wx. I need to also update the operations manual every time I release code and I have NOT done this yet for the 1.10.0 release. If nothing else, I'm getting more incentive to make fewer releases, it is a lot of work getting all this stuff updated in a coordinated manner.

All: To connect the DS1994s to the T238 you will need the "blue dot" i-button reader. You can get it either by itself or you can get a package deal that has a DS1994, reader, and another DS9097U serial port adapter all as one package. To attach the reader to the T238 and your weather station, I use a regular telephone Y adapter. The only tricky part is that it is a very tight fit to get both the Y adapter and the power jack plugged in at the same time.

Brian/Mark: To program a micro from scratch is pretty. You already have a T238 board so you can program a fresh micro in that board then just transfer it to your home brew board. To program a fresh micro you will need to download the Motorola toolset from P&E microsystems. I have a link to them on the wx website under links. Once you get the tools up and running, just invoke the programmer tool, point to the latest S19 file from the website and tell it to program the device. I'm leaving a few steps out, but am hoping they are pretty self-explanitory. Don't forget, when you reprogram from scratch you lose your IDs. In the file WIREIDS.ASM are the instructions on where to find those IDs and save them for the future.

Mark: Updates are optional! You don't have to do it! The pace will slow down, but for now a release per month is entirely likely. Only bother upgrading if the new features are worthwhile. Remember, once you have done the calibration process, you will not lose your sensor IDs when you install new software using the monitor program. Only using the Motorola tools will result in lost IDs--that's Brians problem.

Mark: Yes, the header J8 supplies power to only the backlight. It needs to be current limited (R13), so it is not for the display electronics at all. Except for making sure there were no functional problems, I have left the backlight off. Probably why it didn't get enough attention during the Beta test.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] Re: nothing-but-dots Matrix Display

From: William Beals <will@beals5.com>
Date: Mon, 7 Aug 2000 21:51:32 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101373-2000.08.07-22.57.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jim:

Cool on things running! The hot regulator is normal if the backlight is
turned on.

Don't dispair too much on the lack of weather sensors. We are pretty
confident the problem is temporary and more will be available soon. We
just don't know when "soon" is yet.

will

-----Original Message-----
From: james johnson [SMTP:wa6ozj@earthlink.net]
Sent: Monday, August 07, 2000 2:12 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: nothing-but-dots Matrix Display

Will,

Thanks for the support...it worked! Turns out it was a combination of
problems. 1)I had one cold solder joint in one of the display data lines,
and 2)I did have the contrast set wrong. Both now fixed, and it all works
fine. I did notice the regulator heat sink does get quite warm...I recall
someone else commenting on that too. I haven't had a chance to run it for
any length of time, so don't know if the reg heating is normal, dangerous,
or just the way things are.

Also, I saw the notice that Dallas had run out of senors...to bad. It would
be nice if they could had gone on a while longer, as I have some other
folks interested too...oh well.

Thanks again for the help and the speedy response!

73, Jim

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(A8#`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G`````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M`````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`P````4D4Z(%MW>'-I
M9UT@4F4Z(&YO=&AI;F<M8G5T+61O=',@36%T<FEX($1I<W!L87D`[1 !!8 #
M``X```#0!P@`!P`5`#,`( `!`$\!`2" `P`.````T <(``<`%0`Q`#4``0!B
M`0$)@ $`(0```$1".#<R1D5$.4,V0T0T,3%!.#4V,# P,$4X.4(S0S Y`$ '
M`0.0!@!," ``(0````L``@`!````"P`C```````#`"8```````L`*0``````
M`P`N```````#`#8``````$ `.0``MB?QZP# `1X`< `!````, ```%)%.B!;
M=WAS:6==(%)E.B!N;W1H:6YG+6)U="UD;W1S($UA=')I>"!$:7-P;&%Y``(!
M<0`!````%@````' `.OQ)^TOA]QLG!'4J%8``.B;/ D``!X``@P!````!0``
M`%--5% ``````'@`?# $````0```=VEL;$!B96%L<S4N8V]M``,`!A#(XGWW
M`P`'$"($```>``@0`0```&4```!*24TZ0T]/3$].5$A)3D=34E5.3DE.1U1(
M14A/5%)%1U5,051/4DE33D]234%,24942$5"04-+3$E'2%1)4U154DY%1$].
M1$].5$1)4U!!25)43T]-54-(3TY42$5,04-+3T97``````(!"1 !````'@4`
M`!H%``!"!P``3%I&=2G8CEX_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#
M`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#
M8P!!"V! ;F<Q,#,S"Z8@^DH'<#H*H@J$"H (4 ;PHB "("!T: N 9P0@&')U
M;@,`%@`A("# 5&AE(&AO!4 )<#1G=0M@= 6Q! `@;K\%L # `R &D!AA&:!B
M`-!@:VQI9V@%0!JA=*T(<&X)@!@Q+A<Z1 (@VB<%0&0$``JP:07 &F#H;R!M
```

```
M%1!H&#09H M@YQO0&# ;4'=E&E 9D 7 IP^@`( %L',N&6!7&:"/"L 9H!$P
M#[!T>2 %H'AN9FD!``(P&V,1,&_9`F!E;1Q#(W!P!; *P+\B( !P'- $8"&A
M`_!L`R#Z8B%Q=@MP"V C42"P& !C'0`A0VIU<QXA'?-K6QK0!^!W&9 #H"(F
M(B+]&I)Y#[ =&R4"%SH*]!OP?#,V`4 5H % (R$CT&-"=!!T,38@+2RR3RT%
M$&<+@!L130>0<V'\9V4LLQ<V*\0KD0L3*\9@:2TQ-#0!0!OP,1PX, % #- P
M4V(@1I<#81<@#))B#]!J80>"&&IO:"#A`Z!;4TT`5% Z=V$V;WHL:D @4 `@
M:!OP;FOR+ARP=%T7-3& !F ",(4QYTT"(&1A>2P/X.9U&B FX3 W-L !T##@
M23> .C$18%!--0=40F\QYU1!4%(A4%C-!@!P!9 ',2!)`C $D$L'D 5 1P-@
M=7 U"'6,8FHK\3'G6W=X`)!D9UT'\&4Z&L$8<RU08G5T+2<0= 0@36,:4 40
M>"!$'E$+8'E?+E\O:BL4"[870U<E$2SW%SH9@ !P:P0@`A >H1F17G,[4"0!
M*-!%(&D%0'?]!;!K"8 94AR1!" (8!PQ=45A800@82(Q!M M070^:1A!(!$7
M-",E(2(Q*?I)&;!A'-(9H CA'- @\/]*(""1,M +@!PQ1^%)T2 1_QMR'D(_
M@1XP&E!'(#1Q!Y#W-L 7-"1R,DE1'D <T ]P_G89H!MR(D$^\$;P!4 /H>\@
M, -@%@`A,4(]T1K!!^#](G!X"8 VP"1R15$'0 ,@_T6"!"$70R)P'+ A,4X$
M/<'\:6-.E!H(&9 :4""P-('/)P$'D2W@!4!Q=450).'="L!M12%)8 EP8U&R
M%S3G(/ '@$G"96P/H$<R!X#_`C 8D1@T5/$>P5+S3F(>`O])@D<A0]%3PA[@
M&.%&HD0R_TU&(B C8!8`4&%+D@=Q-L#_(/ G"AM%&@%4PUD"&J<VP/\VD!8`
M!) (8$T7!;$FPQMR7S.P(B 8=2&1'1M!6%!O?S; 26 MP ?@&W)3AU3Q1/]1
ML4;Q28);PD9R(!$@P2$"UT4@6Y$;L&0A,$E%8AHP_QS0%S0E40,`4\$;1"(B
M:-+]28)G2U,#H$<@)\ #$!^A_T_A!)!1(00@6B0F$0> &##_('-250;P1 %*
MX3K#',%9PO]%(#+@(#$E(!T;0\4MT MQ\T0G&9!L<"1C1',Z( F 3R(@.M$D
M``" 92$7.C>^,S; %O$I_@J +B=9"&#=(8-C"' )< (P;"(@1+#^8@3R)5!O
M,B P/2)L@3V@KG<&T"!06%! 1T%P)M#[!)!.@"Y'04-E'N 8\'@7_R"R6N("
M8$/A6# `P ,16Y&;(V!.<2T]$S! -3<W4/Q-0!OP)N A( &0$3!OH%1R9W5/
M"A'Q`($0```#`! 0``````,`$1 ``````P" $/____] ``<PH*>:M>L`P %
M``@PH*>:M>L`P $+``" "" &`````# ````````1@`````#A0````````,`
M`H (( 8``````, ```````!&`````!"%`````````P`%@ @@!@`````P ``
M`````$8`````4H4``+<-```#`F "" &`````# ````````1@`````!A0``
M`````!X`(H (( 8``````, ```````!&`````%2%```!````! ```#@N, `+
M`": "" &`````# ````````1@`````.A0````````,`)X (( 8``````, `
M``````!&`````!&%`````````P`I@ @@!@``````P ```````$8`````&(4`
M```````>`#B "" &`````# ````````1@`````VA0```0````$`````````
M'@`Y@ @@!@``````P ```````$8`````-X4```$````!`````````!X`.H (
M( 8``````, ```````!&`````#B%```!`````0`````````>`#T``0````4`
4``!213H@``````,`#33]-P``KQ^%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

63. [wxsig] RE: 1994 connections, micros, etc

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 8 Aug 2000 00:23:00 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101379-2000.08.07-23.28.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Seems to me that the Blue Dot receptacle is overkill for the 1994, why
not the simple PC board iButton connector and two wires to ground and
One_Wire Data?

OK, next, How about storing Wire_IDs in the 1994?

I just wanted to know about programming a blank CPU. Now what is the
best source for the CPU if I am building a kit from scratch? It would be
getting calibrated to the new weather station anyway so 'lost Wire_IDs'
aren't a consideration.

Steve says there are no separate PC boards available. Any chance to get
ahold of the PC Board layout files so I can pull some of the optional
stuff out and maybe add the DS1994 PC Board receptacle and an MX614?

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: William Beals
> Sent: Monday, August 07, 2000 11:04 PM
>
> Folks:
>

> All: To connect the DS1994s to the T238 you will need the "blue dot"
> i-button reader. You can get it either by itself or you can
> get a package deal that has a DS1994, reader, and another DS9097U
> serial port adapter all as one package. To attach the reader to the
> T238 and your weather station, I use a regular telephone Y adapter.
> The only tricky part is that it is a very tight fit to get both the Y
> adapter and the power jack plugged in at the same time.
>
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] Re: For Sale - One Wire Weather station

From: "Chuck Gooden" <chgooden@worldnet.att.net>
Date: Tue, 8 Aug 2000 01:20:51 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101424-2000.08.08-01.27.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Byron,

Unfortuantly you were the second response I received to my email. I
will put you on the list in case the other person backs out.

73's

On 7 Aug 00, at 10:24, Byron Lichtenwalner wrote:

> Chuck
> I will buy your 1 wire weather station.
> Respond to me at w3wkr@ptd.net
> Byron
>
>
> ---
> You are currently subscribed to wxsig as: chgooden@worldnet.att.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

Chuck Gooden N9QBT
Rockford, IL

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] Re: 1994 connections, micros, etc

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Tue, 8 Aug 2000 06:48:22 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101427-2000.08.08-05.54.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the clarification on the 1994 etc.

>
> All: To connect the DS1994s to the T238 you will need the "blue dot"
> i-button reader. You can get it either by itself or you can get a package
> deal that has a DS1994, reader, and another DS9097U serial port adapter
all
> as one package. To attach the reader to the T238 and your weather
station,
> I use a regular telephone Y adapter. The only tricky part is that it is a
> very tight fit to get both the Y adapter and the power jack plugged in at
> the same time.
>
> Brian/Mark: To program a micro from scratch is pretty. You already have
a
> T238 board so you can program a fresh micro in that board then just
> transfer it to your home brew board. To program a fresh micro you will
> need to download the Motorola toolset from P&E microsystems. I have a
link

> to them on the wx website under links. Once you get the tools up and
> running, just invoke the programmer tool, point to the latest S19 file
from
> the website and tell it to program the device. I'm leaving a few steps
> out, but am hoping they are pretty self-explanitory. Don't forget, when
> you reprogram from scratch you lose your IDs. In the file WIREIDS.ASM are
> the instructions on where to find those IDs and save them for the future.

I managed to update my prom easily enough but thanks for the guide

> Mark: Updates are optional! You don't have to do it! The pace will slow
> down, but for now a release per month is entirely likely. Only bother
> upgrading if the new features are worthwhile. Remember, once you have
done
> the calibration process, you will not lose your sensor IDs when you
install
> new software using the monitor program. Only using the Motorola tools
will
> result in lost IDs--that's Brians problem.
>
> Mark: Yes, the header J8 supplies power to only the backlight. It needs
> to be current limited (R13), so it is not for the display electronics at
> all. Except for making sure there were no functional problems, I have
left
> the backlight off. Probably why it didn't get enough attention during the
> Beta test.

I was a little unsure as there was no diagram supplied for the LCD display.
I didn't know if the power was for the light or for the whole display.

Thanks for all your help folks and please accept my appologies for
'swamping' the group.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

66. [wxsig] RE: Lightning detector

From: JerryJAE4XW@cs.com
Date: Tue, 8 Aug 2000 06:50:43 EDT
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101428-2000.08.08-05.56.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Anyone out there know how to connect the VLF2002 lightning detector to a
computer? I don't mind the $30 bucks for the detector but going to the next
step at $120 to connect it to the computer is a bit much.

Jerry AE4XW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

67. [wxsig] RE: 1994 connections, micros, etc

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Tue, 8 Aug 2000 06:55:05 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101431-2000.08.08-06.00.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think a MX614 would be overkill. Why not do it in a PIC like the trackers
do? We don't need a modem, just a way of making the tones. I can offer some
sources for a 9k6 modem I got involved with that uses an Atmel processor to
both encode and decode the packets. It turned out to be a cheap project at
only $30 for the entire kit.

Lemme know if you want a look.

Mark

----- Original Message -----
From: "Brian B. Riley" <brianbr@wulfden.org>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Tuesday, August 08, 2000 12:23 AM
Subject: [wxsig] RE: 1994 connections, micros, etc

> Seems to me that the Blue Dot receptacle is overkill for the 1994, why
> not the simple PC board iButton connector and two wires to ground and
> One_Wire Data?
>
> OK, next, How about storing Wire_IDs in the 1994?
>
> I just wanted to know about programming a blank CPU. Now what is the
> best source for the CPU if I am building a kit from scratch? It would be
> getting calibrated to the new weather station anyway so 'lost Wire_IDs'
> aren't a consideration.
>
> Steve says there are no separate PC boards available. Any chance to get
> ahold of the PC Board layout files so I can pull some of the optional
> stuff out and maybe add the DS1994 PC Board receptacle and an MX614?
>
> 73 de brian
>
> --
> N1BQ-3 @ 44 31.73N 072 51.55W
> WideN-N digi and weather station in Underhill Center, VT
> <n1bq@amsat.org>
>
>
> > -----Original Message-----
> > From: William Beals
> > Sent: Monday, August 07, 2000 11:04 PM
> >
> > Folks:
> >
> > All: To connect the DS1994s to the T238 you will need the "blue dot"
> > i-button reader. You can get it either by itself or you can
> > get a package deal that has a DS1994, reader, and another DS9097U
> > serial port adapter all as one package. To attach the reader to the
> > T238 and your weather station, I use a regular telephone Y adapter.
> > The only tricky part is that it is a very tight fit to get both the Y
> > adapter and the power jack plugged in at the same time.
> >
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] Re: RE: Lightning detector

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Tue, 8 Aug 2000 06:59:07 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101434-2000.08.08-06.04.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is it a 1-wire detector? If so just plug it onto your bus.

Mark
----- Original Message -----
From: <JerryJAE4XW@cs.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Tuesday, August 08, 2000 6:50 AM
Subject: [wxsig] RE: Lightning detector

> Anyone out there know how to connect the VLF2002 lightning detector to a
> computer? I don't mind the $30 bucks for the detector but going to the

next
> step at $120 to connect it to the computer is a bit much.
>
> Jerry AE4XW
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] Re: Lightning detector

From: JerryJAE4XW@cs.com
Date: Tue, 8 Aug 2000 10:13:22 EDT
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101450-2000.08.08-09.19.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the answer but this is an item I bought for $30 from
www.stormwise.com it is called an "electric field receiver" and the software
is free but the interface isn't, I see they have changed the web site and
this is no longer advertised as a lightning detector, but I know it does work
as one. It also works as a low freq receiver but I haven't found much for
that.

I'll keep messing around and get it connected to a serial port somehow.

Thanks again

Jerry AE4XW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

70. [wxsig] T-238 LCD Panel

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 8 Aug 2000 10:23:19 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101452-2000.08.08-09.29.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark Phillips, G7LTT/KC2ENI said:

> I was a little unsure as there was no diagram supplied for
> the LCD display. I didn't know if the power was for the light
> or for the whole display.

Mark and All,

Power for the display portion of the LCD comes from the 14 conductor flat
cable. Power for the LED backlight comes from a separate source via the
red/black wires from J8. The two are mutually exclusive.

The LCD that comes with the T-238 kit is a Seiko L2034B1J000.

The Seiko LCD web page is at

   http://www.seiko-usa-ecd.com/lcd/html/

There's a lot of good general LCD information there. The data sheet for the
L2034B1J000 is at

   http://www.seiko-usa-ecd.com/lcd/html/character/modules/l2034b1j000.html

There's a pdf data sheet that you can download from the above page.

Hope this helps with understanding the LCD module.

 - Steve, N7HPR
   n7hpr@tapr.org

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] RE: 1994 connections, micros, etc

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 8 Aug 2000 10:30:13 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101455-2000.08.08-09.36.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Don't be absurd. Why put a PIC/Atmel on a board with a 68HC908 aleady on board? The CPU is already burdened with all its work, generating modem tones is overburden. I would rather the CPU time be available for other features ... Programming a PIC just to be a modem is a waste of time - just let the modem chip do its job.

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Mark Phillips
> Sent: Tuesday, August 08, 2000 6:55 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: 1994 connections, micros, etc
>
>
> I think a MX614 would be overkill. Why not do it in a PIC
> like the trackers
> do? We don't need a modem, just a way of making the tones. I
> can offer some
> sources for a 9k6 modem I got involved with that uses an
> Atmel processor to
> both encode and decode the packets. It turned out to be a
> cheap project at
> only $30 for the entire kit.
>
> Lemme know if you want a look.
>
> Mark
>
> ----- Original Message -----
> From: "Brian B. Riley" <brianbr@wulfden.org>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Tuesday, August 08, 2000 12:23 AM
> Subject: [wxsig] RE: 1994 connections, micros, etc
>
>
> > Seems to me that the Blue Dot receptacle is overkill for
> the 1994, why
> > not the simple PC board iButton connector and two wires to
> ground and
> > One_Wire Data?
> >
> > OK, next, How about storing Wire_IDs in the 1994?
> >
> > I just wanted to know about programming a blank CPU. Now what is the
> > best source for the CPU if I am building a kit from
> scratch? It would be
> > getting calibrated to the new weather station anyway so
> 'lost Wire_IDs'
> > aren't a consideration.
> >
> > Steve says there are no separate PC boards available. Any
> chance to get
> > ahold of the PC Board layout files so I can pull some of
> the optional
> > stuff out and maybe add the DS1994 PC Board receptacle and an MX614?
> >
> > 73 de brian
> >
> > --
> > N1BQ-3 @ 44 31.73N 072 51.55W
> > WideN-N digi and weather station in Underhill Center, VT
> > <n1bq@amsat.org>
> >
> >
> > > -----Original Message-----
> > > From: William Beals
> > > Sent: Monday, August 07, 2000 11:04 PM
> > >

> > > Folks:
> > >
> > > All: To connect the DS1994s to the T238 you will need the
> "blue dot"
> > > i-button reader. You can get it either by itself or you can
> > > get a package deal that has a DS1994, reader, and another DS9097U
> > > serial port adapter all as one package. To attach the
> reader to the
> > > T238 and your weather station, I use a regular telephone
> Y adapter.
> > > The only tricky part is that it is a very tight fit to
> get both the Y
> > > adapter and the power jack plugged in at the same time.
> > >
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to
> leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

72. [wxsig] RE: 1994 connections, micros, etc

From: Mark Phillips <Mark.Phillips@royalblue.com>
Date: Tue, 8 Aug 2000 10:50:06 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101457-2000.08.08-09.55.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Not as absurd as you might think.

using a processor to dop a modems job would allow for other uses. eg taking
the data from the 6808 and adding a GPS string to it. The PIC/Atmel could
then create different kinds of beacon based on the data fed to it rather
than blindly sending out a pre-assembled string.

-----Original Message-----
From: bounce-wxsig-19302@lists.tapr.org
[mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Brian B. Riley
Sent: Tuesday, August 08, 2000 10:30 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: 1994 connections, micros, etc

Don't be absurd. Why put a PIC/Atmel on a board with a 68HC908 aleady on
board? The CPU is already burdened with all its work, generating modem
tones is overburden. I would rather the CPU time be available for other
features ... Programming a PIC just to be a modem is a waste of time -
just let the modem chip do its job.

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Mark Phillips
> Sent: Tuesday, August 08, 2000 6:55 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: 1994 connections, micros, etc
>
>
> I think a MX614 would be overkill. Why not do it in a PIC
> like the trackers
> do? We don't need a modem, just a way of making the tones. I
> can offer some
> sources for a 9k6 modem I got involved with that uses an

> Atmel processor to
> both encode and decode the packets. It turned out to be a
> cheap project at
> only $30 for the entire kit.
>
> Lemme know if you want a look.
>
> Mark
>
> ----- Original Message -----
> From: "Brian B. Riley" <brianbr@wulfden.org>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Tuesday, August 08, 2000 12:23 AM
> Subject: [wxsig] RE: 1994 connections, micros, etc
>
>
> > Seems to me that the Blue Dot receptacle is overkill for
> the 1994, why
> > not the simple PC board iButton connector and two wires to
> ground and
> > One_Wire Data?
> >
> > OK, next, How about storing Wire_IDs in the 1994?
> >
> > I just wanted to know about programming a blank CPU. Now what is the
> > best source for the CPU if I am building a kit from
> scratch? It would be
> > getting calibrated to the new weather station anyway so
> 'lost Wire_IDs'
> > aren't a consideration.
> >
> > Steve says there are no separate PC boards available. Any
> chance to get
> > ahold of the PC Board layout files so I can pull some of
> the optional
> > stuff out and maybe add the DS1994 PC Board receptacle and an MX614?
> >
> > 73 de brian
> >
> > --
> > N1BQ-3 @ 44 31.73N 072 51.55W
> > WideN-N digi and weather station in Underhill Center, VT
> > <n1bq@amsat.org>
> >
> >
> > > -----Original Message-----
> > > From: William Beals
> > > Sent: Monday, August 07, 2000 11:04 PM
> > >
> > > Folks:
> > >
> > > All: To connect the DS1994s to the T238 you will need the
> "blue dot"
> > > i-button reader. You can get it either by itself or you can
> > > get a package deal that has a DS1994, reader, and another DS9097U
> > > serial port adapter all as one package. To attach the
> reader to the
> > > T238 and your weather station, I use a regular telephone
> Y adapter.
> > > The only tricky part is that it is a very tight fit to
> get both the Y
> > > adapter and the power jack plugged in at the same time.
> > >
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to
> leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

>

You are currently subscribed to wxsig as: g7ltt@g7ltt.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

****
This message is intended only for the stated addressee(s) and may
be confidential. Access to this email by anyone else is unauthorised.
Any opinions expressed in this email do not necessarily reflect the
opinions of royalblue. Any unauthorised disclosure, use or
dissemination, either whole or in part is prohibited. If you are
not the intended recipient of this message, please notify the sender
immediately.
****

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

73. [wxsig] RE: 1994 connections, micros, etc

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 8 Aug 2000 11:05:39 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101458-2000.08.08-10.11.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

WHOA! We are currently using about 4-6K of the 32K code space in the
68HC908. We are currently only dumping _out_ of the serial port ... if
we wanted to add GPS stuff we can do it as is and only need another 1K
of code at most. But then why would we want to add a GPS to a weather
station? last time I checked an anemometer doesn't work to red hot on a
moving vehicle, temperature readings are near meaningless, etc.

Let us keep this in perspective. The T-238 was designed with APRS
weather networking in mind. To use your own words we have PICs galore
(TinyTrak, PIC-Trak, etc) to do tracker work. The T238 is an elegantly
simple yet powerful OneWire controller that can be enhanced quite simply
by adding the modem chip. The ideas you are pumping out seem to want to
make the board into a kluged collection of processors to replace a APRS
client program on a PC ... that is not what this is about.

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: Mark Phillips
> Sent: Tuesday, August 08, 2000 10:50 AM

> Not as absurd as you might think.
>
> using a processor to dop a modems job would allow for other
> uses. eg taking the data from the 6808 and adding a GPS string
> to it. The PIC/Atmel could then create different kinds of beacon
> based on the data fed to it rather than blindly sending out a
> pre-assembled string.
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

74. [wxsig] Re: nothing-but-dots Matrix Display

From: GS <gsanders1@bigfoot.com>
Date: Tue, 08 Aug 2000 11:24:31 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101461-2000.08.08-10.30.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all....

I've been lurking, as I have a 1 wire weather station and have
been considering this project. The discussion of the voltage
regulator heat when using the LCD display has been interesting.

I admit that I haven't looked at the schematics closely, but I
do have one question/comment: Why run the LCD backlight through
the regulator at all? The voltage requirement isn't critical - all
it does is power some LEDs as I recall.

Why not just connect the backlight directly to the unregulated
supply source (using an appropriately sized current limiting resistor
of course)? That way, you can keep the backlight on all the time
without worrying about the regulator.

In reality it may not reduce the overall power consumption much, but
it does spread it out over more components. And it's easy to use a
BIG power resistor for backlight heat dissipation if necessary, and
an appropriately sized heat sink for the regulator (and keeps the
regulator quite a bit less stressed).

That's what I used to do when I had a HCS-2 home control system that
used a 4X20 backlit LCD display, and it worked well for years.

Gary Sanders WB0BZR

William Beals wrote:
>
> Jim:
>
> Cool on things running! The hot regulator is normal if the backlight is
> turned on.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

75. [wxsig] RE: 1994 connections, micros, etc

From: Gerry Creager <gerry@cs.tamu.edu>
Date: Tue, 08 Aug 2000 10:49:13 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101464-2000.08.08-10.55.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:
>
> WHOA! We are currently using about 4-6K of the 32K code space in the
> 68HC908. We are currently only dumping _out_ of the serial port ... if
> we wanted to add GPS stuff we can do it as is and only need another 1K
> of code at most. But then why would we want to add a GPS to a weather
> station? last time I checked an anemometer doesn't work to red hot on a
> moving vehicle, temperature readings are near meaningless, etc.
>
> Let us keep this in perspective. The T-238 was designed with APRS
> weather networking in mind. To use your own words we have PICs galore
> (TinyTrak, PIC-Trak, etc) to do tracker work. The T238 is an elegantly
> simple yet powerful OneWire controller that can be enhanced quite simply
> by adding the modem chip. The ideas you are pumping out seem to want to
> make the board into a kluged collection of processors to replace a APRS
> client program on a PC ... that is not what this is about.

Hmmm... if we were to add barometry and GPS binary (binex) or ascii
(RINEX) data, and the hard part, elative humidity, then we'd potentially
have some GPS precipitable water stations for 'way cheap. We can use L1
receivers with code, phase and doppler, provided there's a central L2
receiver for time comparison in the area... but I digress, and dream a
bit much, I suppose.
--
Gerry Creager | Never ascribe to Malice that
Computer Science Department | which can adequately be
Texas A&M University | explained by Stupidity.
979.458.4020 (Phone) | -- Lazerus Long
979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

76. [wxsig] RE: 1994 connections, micros, etc

From: Ray Vaughan <ray@rayvaughan.com>
Date: Tue, 08 Aug 2000 12:07:15 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-101466-2000.08.08-11.13.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 11:05 AM 8/8/00 -0400, you wrote:
>WHOA! We are currently using about 4-6K of the 32K code space in the
>68HC908. We are currently only dumping _out_ of the serial port ... if
>we wanted to add GPS stuff we can do it as is and only need another 1K
>of code at most. But then why would we want to add a GPS to a weather
>station? last time I checked an anemometer doesn't work to red hot on a
>moving vehicle, temperature readings are near meaningless, etc.

Well, not totally. Think of it as the two data sources working with each other to come up with the data. I think the storm chasers calculate the data after correcting for vehicle motion. So, if you detect wind from 180 degrees in reference to the car (it's coming from behind you) and your GPS says you're headed East, then winds are from the West. Same can be done for wind speed. Vector addition I guess. You might want to check with the storm chasers to get more information about how they do it, but I does seem like there's a need there. Same thing would apply to boaters too.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

77. [wxsig] Re: Lightning detector

From: Bob Staley <BobS@Zonge.com>
Date: Tue, 8 Aug 2000 09:27:40 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101470-2000.08.08-11.36.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you check out their site further under the vlf detector schematics, you
will see one with an led. Substitute an optical coupler for this and
connect to a one wire counter if you want to use your one wire weather
station, though I am not sure if software is available from anyone yet.
Otherwise you can do like Stormwise and use a fiber optic cable from the
sensor to a receiver which switches the serial port on your computer. I
imagine that their receiver is a level converter from the optical receiver
to the RS-232 input. The fiber optic cable method works well in relation to
safety in keeping the lighting out of your house.
        Stormwise is also selling kits for their lighting sensors and vlf
sensor now. The price is very reasonable so is well worth checking out.
Cheers
Bob Staley

-----Original Message-----
From: JerryJAE4XW@cs.com [mailto:JerryJAE4XW@cs.com]
Sent: Tuesday, August 08, 2000 7:13 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Lightning detector

Thanks for the answer but this is an item I bought for $30 from
www.stormwise.com it is called an "electric field receiver" and the software

is free but the interface isn't, I see they have changed the web site and
this is no longer advertised as a lightning detector, but I know it does
work
as one. It also works as a low freq receiver but I haven't found much for
that.

I'll keep messing around and get it connected to a serial port somehow.

Thanks again

Jerry AE4XW

You are currently subscribed to wxsig as: bobs@zonge.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Zonge Engineering and Research Organization
http://www.zonge.com
3322 E. Ft. Lowell Rd.
Tucson, AZ 85716
(520) 327-5501
Fax: (520) 325-1588

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

78. [wxsig] Temp Shield pics

From: Doug <dbuhrman@radiks.net>
Date: Tue, 08 Aug 2000 16:52:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101515-2000.08.08-17.57.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As soon as my buddy gets here (later this week) I'll get some pictures and get them uploaded. Like I said, it's kind of big but it went together fast.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

79. [wxsig] RE: 1994 connections, micros, etc

From: Doug <dbuhrman@radiks.net>
Date: Tue, 08 Aug 2000 17:18:33 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101519-2000.08.08-18.24.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you call Dallas Semi you can get holders (pin or surface mount) for $1.77. I sure like the idea of the MX614!!! With all the horsepower left on the CPU it's a shame it can't be doing the TNC functions and freeing up a box (not to mention cost). Where can a person get info or buy the MX614?

"Brian B. Riley" wrote:

> Seems to me that the Blue Dot receptacle is overkill for the 1994, why
> not the simple PC board iButton connector and two wires to ground and
> One_Wire Data?
>
> OK, next, How about storing Wire_IDs in the 1994?
>
> I just wanted to know about programming a blank CPU. Now what is the
> best source for the CPU if I am building a kit from scratch? It would be
> getting calibrated to the new weather station anyway so 'lost Wire_IDs'
> aren't a consideration.
>
> Steve says there are no separate PC boards available. Any chance to get
> ahold of the PC Board layout files so I can pull some of the optional
> stuff out and maybe add the DS1994 PC Board receptacle and an MX614?
>
> 73 de brian
>
> --
> N1BQ-3 @ 44 31.73N 072 51.55W
> WideN-N digi and weather station in Underhill Center, VT
> <n1bq@amsat.org>
>
> > -----Original Message-----
> > From: William Beals
> > Sent: Monday, August 07, 2000 11:04 PM
> >
> > Folks:
> >
> > All: To connect the DS1994s to the T238 you will need the "blue dot"
> > i-button reader. You can get it either by itself or you can
> > get a package deal that has a DS1994, reader, and another DS9097U
> > serial port adapter all as one package. To attach the reader to the
> > T238 and your weather station, I use a regular telephone Y adapter.
> > The only tricky part is that it is a very tight fit to get both the Y
> > adapter and the power jack plugged in at the same time.
> >
> >
> >
>
> ---
> You are currently subscribed to wxsig as: dbuhrman@radiks.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] RE: 1994 connections, micros, etc

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 8 Aug 2000 19:29:00 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101521-2000.08.08-18.34.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR has been selling MX614s in single quantities. I don't know what the
current status of that is. Steve???

I know about the PC board holders for iButtons. I ordered one each for
the two 1994s I just bought. I was commenting on the pricey use of a
"blue dot" receptacle with the T-238

> -----Original Message-----
> From: Doug
> Sent: Tuesday, August 08, 2000 7:19 PM
>
> If you call Dallas Semi you can get holders (pin or surface
> mount) for $1.77. I sure like the idea
> of the MX614!!! With all the horsepower left on the CPU it's
> a shame it can't be doing the TNC
> functions and freeing up a box (not to mention cost). Where
> can a person get info or buy the MX614?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] RE: 1994 connections, micros, etc

From: Steve Dimse <sdimse@netrox.net>
Date: Tue, 8 Aug 2000 19:30:30 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101522-2000.08.08-18.36.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 8/8/00 7:18 PM Doug (dbuhrman@radiks.net) wrote:

>If you call Dallas Semi you can get holders (pin or surface mount) for
>$1.77. I sure like the idea
>of the MX614!!! With all the horsepower left on the CPU it's a shame it
>can't be doing the TNC
>functions and freeing up a box (not to mention cost). Where can a person
>get info or buy the MX614?
>
TAPR sells them, we have not found anyone that sells then in q1's, they
can be ordered throught the TAPR web page. There are schematics and other
info in the Mic-E web site, along with PIC source code for using this for
both transmitting and receiving.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

82. [wxsig] Weather Objects

From: "LaPorte County Skywarn" <lapcoskywarn@home.com>
Date: Tue, 8 Aug 2000 19:52:51 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101539-2000.08.08-20.00.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anyone been able to IGATE weather objects to VHF? If so, what is required (or how)?

And since we are talking objects, has anyone been able to IGATE Earthquakes and Hurricane objects?

Ken N9ZIP
LaPorte County, Indiana - SKYWARN

83. [wxsig] Re: 1994 connections, micros, etc

From: William Beals <will@beals5.com>
Date: Tue, 8 Aug 2000 20:26:51 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101552-2000.08.08-22.42.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

This reflector is here for questions about the kit, so you arn't swamping
it at all. As Steve points out, it is also for anyting weather-releated
too, but for now the kit seems to be dominating the bandwidth!

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Tuesday, August 08, 2000 4:48 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1994 connections, micros, etc

Thanks for the clarification on the 1994 etc.

>
> All: To connect the DS1994s to the T238 you will need the "blue dot"
> i-button reader. You can get it either by itself or you can get a
package
> deal that has a DS1994, reader, and another DS9097U serial port adapter
all
> as one package. To attach the reader to the T238 and your weather
station,
> I use a regular telephone Y adapter. The only tricky part is that it is
a
> very tight fit to get both the Y adapter and the power jack plugged in at
> the same time.
>
> Brian/Mark: To program a micro from scratch is pretty. You already have
a
> T238 board so you can program a fresh micro in that board then just
> transfer it to your home brew board. To program a fresh micro you will
> need to download the Motorola toolset from P&E microsystems. I have a
link
> to them on the wx website under links. Once you get the tools up and
> running, just invoke the programmer tool, point to the latest S19 file
from
> the website and tell it to program the device. I'm leaving a few steps
> out, but am hoping they are pretty self-explanitory. Don't forget, when
> you reprogram from scratch you lose your IDs. In the file WIREIDS.ASM
are
> the instructions on where to find those IDs and save them for the future.

I managed to update my prom easily enough but thanks for the guide

> Mark: Updates are optional! You don't have to do it! The pace will
slow
> down, but for now a release per month is entirely likely. Only bother
> upgrading if the new features are worthwhile. Remember, once you have
done
> the calibration process, you will not lose your sensor IDs when you
install
> new software using the monitor program. Only using the Motorola tools
will
> result in lost IDs--that's Brians problem.
>
> Mark: Yes, the header J8 supplies power to only the backlight. It needs
> to be current limited (R13), so it is not for the display electronics at
> all. Except for making sure there were no functional problems, I have
left
> the backlight off. Probably why it didn't get enough attention during
the
> Beta test.

I was a little unsure as there was no diagram supplied for the LCD display.
I didn't know if the power was for the light or for the whole display.

Thanks for all your help folks and please accept my appologies for
'swamping' the group.

Mark Phillips, G7LTT/KC2ENI

New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(C0#`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`N````4D4Z(%MW>'-I
M9UT@4F4Z(#$Y.30@8V]N;F5C=&EO;G,L(&UI8W)O<RP@971C``</`06 `P`.
M````T <(``@`% `:`#,``@!*`0$@@ ,`#@```- '" `(`!0`&0`4``(`*@$!
M"8 !`"$````R0T(S,T0S-S8R-D1$-#$Q03@U-C P,#!%.#E",T,P.0`"!P$#
MD 8`& P``"$````+``(``0````L`(P```````P`F```````+`"D```````,`
M+@`````P`V``````! `#D`8'N 1JD!P $>`' ``0```"X```!213H@6W=X
M<VEG72!293H@,3DY-"!C;VYN96-T:6]N<RP@;6EC<F]S+"!E=&,````"`7$`
M`0```!8````!P &I1G@W/;,M;6(1U*A6``#HFSP)```>`!X,`0````4```!3
M3510``````!X`'PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80:S/M$ ,`
M!Q ="0``@`($ $```!E````34%22SI42$E34D5&3$5#5$]225-(15)%1D]2
M455%4U1)3TY304)/55142$5+250L4T]93U5!4DY44U=!35!)3D=)5$%404Q,
M05-35$5615!/24Y44T]55"Q)5$E304Q33T9/4@``````"`0D0`0```.H(``#F
M" ``> X``$Q:1G69=<7E/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0
M#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`
M00M@P&YG,3 S,PNF!= Y"L!K.@JB"H0*@%1HI00`( EP9FP%D'0%L648(6@$
MD&4@`A %P''Q"E!S=&D"( 0@`: (8!4%0'09(" 4L'0L('!S;R!Y"& :0 2@
M)Z,%0 /@86UP"X!G&."%!4!A'+%L;"X@#^"1!D%T97894'!O"X#^= 0@&G$;
M(!RA&"$'0!M!FQER``!Y&? <<7=E'-!]&2$M"7 8@!S0"8 :H&^:;QL@8AJ!
M&7)N;P?@]QJU&S )X&T$(!BP(7 94+YD`W +@!S0'&(:LF(`<.ID`_!D&K A
M%TH#\!T0PQ=*"O1L:3,V`4 5H#L!0!$P;QV@&* 0=#$VU" M*-)/!1!G([$#
M(,)-!Y!S86=E*-,71@\GY">Q"Q,GYFDM,33&- % )S Q.# !0 S0<2QS8B!&
M`V$7, R28GD6U"!0&! =$ 4@!"!;`%--5% Z9S=LE0) 0"_3+@6@;5T712\M
MH 9@`C N!U09P61A0GD;($%U9W49X" <,#@;( '0+0`@-#J4-#@/X$TPUU1O
M,:A 05!2(%=8!@!P<P60!S$@20(P&3$S`4>)`V!U<##8=6)J&)&1+@=;=W@`
MD&==!_ `93H@,3DY-"#Y!:!N;AB1&@(;(".@!0#^;SJ1#[ `X"J/*YDG- NV
M[Q=3"N,7X@!P:P0@&7(:LOYC"V &@3K0(]$"(!Y0`Z#7&K(YHSM!+A=*/D(5
M#^"?'1 Y@#3 .>8:HT13.:+C(P,:LE0R,S/P&W(ETF\A\ G@(1$:P2(*,B-Q
M='XB0H8L4"&!&+ #H EP8?L$@1TQ61N!0$ #H"H`'L'=!4!E&P`9(2%P>1R1
M#Z"\;&8>4 7 &W)))F$=X/T`T&LI\4*&`0`I@1JP'-'_#W :,40U&R!(5!L@
M)($?D0<G\$H"1$ Y,#DW5?\BL0<B'>$`(!I ,G %, 20_Q=$'0%"ADV1`B =
MT4P$'3'_0U$<T &0#V :HTA41+M.XK\;<07 ("471!G@0%,L0H;\22 R\!E0
M2] )<#+@/^'3&J @L7!H4I)94-930NL:P0(@;$I0= 403!!*4+\*L1[#33,>
MM4*&'<!R6K']*4!H(:$<H2,A26(&X!JP?QJC68=.TQJR'? @( 7 :O=,`1W@
M"D!G*@`A$ N ','_0H8:LBG@!X!=00> 0:5"=_)"!R%N+Q;S4U,GT0G _QPP
M2\$ZPQE@`V$;, 4`'-#/4^$8(1$P#[!T>4BU!T#_2%)*4 ]P'<!154*&13,&
MX/\+$1LV22)DZ -0!Y!3\&6$WV%!33-IM!JQ`Z!J,O%AE_ME( " 9DH17<15
MPUDP8G'^8@EP!^!ILU-$:L]EDT6&[T*&1A0;4". =UJ0:<!&1/Y-)_ %L ;P
M2] A,1\@27'19>-0)D4ZM7D9X"+A_QTQ5^!H,EQF)S _$&&71-/O94! M3CP
M(!%B`) =H%?PCQ302A%WPG:B3VYC&5#?&W))8AJR=.-7\'!.TD*&?G)Z( ,`
M%@`;(&U283%V_&]K8H%?XF3T!X!4H@;P_QL@'?-$M@M@': S`4117:'_&( 7
M1 -289IYIE^3(+ #(']=Q&3F&K(!`!1P>R!VLB?_94 @P11P''%K00?1=F$O
M0/]"AAYC(8)E,5DP'%,:L4I0'PK ?L)G`B*Q2K M97CO"U$#`!BQ9S)$`B ;
MX1EQ^TEA&R!W;1%"AAMR"7!DYI]EZQMR"0!8$57#241VHT= Q(%R-;!)4D6/
M4%/\+D$O@(DR89H+@!G@?5#_.D1 HHP!&4$C(2Q 7Z..PK^/44[3*> =P7BS
M/U9F&H#_"'!BUA=$5^ #@2GQ<S,W,/LR<'GQ;5LA9?(@, "06J'_"? (8%UP
M(7--,3\:,N DP/=,54*&9$55F!,:,1E!B)#[&?('0"%(Q". &])W`W-3OQR1
MG>%:0DOQ>5%%TG,)`/YW3&=SD2%L6$(@P5@1-@#?!< $8 (P9I,Q<6D@H4I0
M_R<P?G!:H'K36J%>8E$V0N#[-S!E$60<8TK &K(Z( ?@KVY@'-"6,9T$=PD1
M:(P`_X&!'3$Y8 > !M!.H@(@>R7_:#B>49%;0$ G,&^@0%0GT?][( 00&R!%
MB"?PCJD/H " _P6QE&*,`AMB%T22(E&YIT+_&T !@!P@&4$R\"/VHU&*HO]D
MUJ36L@AT7"5^?3$'D%B0OWX2CJ(%0(]1*-!-,B<$('MCXV;";P)@(N!B[F1%
M6=\'D!L@&K(9(%1S2C/PMM#^< M0")!FP6 C(R%:A"1#_TP0)S!=<7:R!4!&
M$H<W(R1^8PAP"7" (2<P(Z @\BCP4C$S*1LC'K2MTC]6?:: <PM1F4$8@@-@
M`P!CYQHQ88<=!$5X>R %,1ER_P# %+$<@+;0DU(9(V QIR'_'T%Z(#I#4&*X
MY#J1=N1W9;\!<6&:O9<>4 $@'3%0N.'?`:!:H8P`2E+"860;TDEB[YEE4Z&C
```

```
MXD"!9 AQ) 1C9_\/L'3!&=&6;1P@3:(G, ) _Y!!>B#%TTV1QB5-D<;1IH ?
M*?!E(KOE(1 _5DQ#1._"9D&E5^#,%6LB`J;58!3_T'(_5LI5!< _5HP`!O#"
M5W]!JS[I'0%N]2"P?( "$&S_/R%.X@M0HL,`T,33F'%1`/\=\ D`*5 'D1EQ
M%T2X,!PE?B>:M#<20:L71"Z;&R!``#=,5%0O2T,R^$5.21=$!\)(X!<0&R#Z
M3EF +3F0Y' 6,!=$+) !WY T-2XW.#%."3,@-S/?D#4T+C0-`<!7%T1=@'1P
M.B_T+W?G<"XP-^!?X*LJ1_]G<QE!O[5:H;;0>< %`2-0;W,S./-243F =ZEA
M'Q% ]3"1<%@!<AW Z A#4=%"_^OUKJ)/`2%P%>$NP"+@"W _31$;4(82*A X
M\RQ@-3?YY>!-0"<P&>!VH &0$3 N+HN1%TH1\0#T< ```P`0$ `````#`!$0
M``````,`@!#_____0 `',, "G1"I`< !0 `(,, "G1"I`< !"P``@ @@!@``
M````P ````````$8``````X4````````#``* "" &``````# ````````1@``
M```0A0````````,`!8 (( 8``````, ```````!&`````%*%``"W#0```P`)
M@ @@!@``````P ```````$8``````84````````>`"* "" &``````# `````
M````1@````!4A0```0````0````X+C `"P`F@ @@!@``````P ```````$8`
M````#H4````````#`"> "" &``````# ````````1@`````1A0````````,`
M*8 (( 8``````, ```````!&`````!B%````````'@`X@ @@!@``````P ``
M``````$8``````-H4```$`````!`````````!X`.8 (( 8``````, ```````!&
M`````#>%```!`````0`````````>`#J "" &``````# ````````1@`````X
MA0```0````$`````````'@`]``$````%````4D4Z( `````#``TT_3<``#NJ
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

84. [wxsig] 1994/MX614 support

From: William Beals <will@beals5.com>
Date: Tue, 8 Aug 2000 20:40:18 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101553-2000.08.08-22.42.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Lots of traffic on this today!

The reason I suggested the blue-dot is that (at least at the time) it was the only device out there that could be mounted on a chassis that would latch the DS1994. I still have hopes of putting my board in a chassis, so PC-mounted recepticles were out. All the chassis-mount recepticals I could find were press to hold. I don't consider the blue-dot an ideal solution, just the best for what I wanted. Cool part is that this is a kit, so y'all can do whatever you want. For hookup you just need ground and tap off the same place the 1-wire signal goes to the weather station. Just make sure you stay on the protected side of the static protection circuitry.

Brian: The only reason I can think of for putting the 1-wire IDs in the DS1994 would be to transfer those IDs from one weather station to another. Maybe if I could figure out (and rely on) the Dallas SW to present their IDs in a reliable format somewhere we might be able to consider transfer ring the IDs from the PC software to the T238, but that seems of marginal value. If I am going to store them somewhere, the flash seems the safest place to do it. The only way it would ever get lost is if someone wanted to start code development and for them I suggest the easier way of plunking the values in the wireids.asm file instead. Are there other reasons I may be missing?

PC Boards, gerbers, etc belong to TAPR. If you do want to tinker, I feel the best way is still wire-wrap. There is nothing on this board that would be intolerant of such an assembly method. Schematics and source code are available for your perusal and reference. Building the basic electronics using wire-wrap took me about two evenings at less than 3 hours per evening.

MX614 discussions have been around earlier and are tempting. I am the bottleneck for the T238 project expanding in that area primarily because I feel getting the sensor farm up and running is higher priority. Once that stuff is stable, integrating more stuff like the MX614 seems a logical extension. I'm the first to admit that I don't know if a another processor would be needed or not. My biggest concern is that the more real-time tasks you give a micro, the harder it is for that micro to deal with all of them in a timely manner. The 1-Wire timing requirments are very precise, requiring me to turn off interrupts whenever I send a bit (I turn them on between bits, so the lockout time is pretty small). If the MX614 has similar requirements, we could be hosed. Without a lot of detailed analysis, I'm not sure if another CPU would be required or not.

will

```
  ------------------------------------------------------------
This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)
------------------------------------------------------------
Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

85. [wxsig] RE: RE: Lightning detector

From: William Beals <will@beals5.com>
Date: Tue, 8 Aug 2000 20:59:55 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101554-2000.08.08-22.42.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jerry:

I have looked at that sensor before and it is a likley candidate if I ever get around to lightning support for T238.

You could make it 1-wire compatible pretty easily by having it drive the counter input on one of the Dallas 1-Wire counter chips, but that is probably overkill. Bob's idea of optocoupling is a good idea, but someone has to write some code to count ticks on the PC. I am only a DOS programmer where I know it could be done, but beyond that, things get tricky.

If you just want counts and the PC isn't necessary, there are counter modules that count pulses. They can be available for surplus fairly cheaply sometimes.

will

-----Original Message-----
From: JerryJAE4XW@cs.com [SMTP:JerryJAE4XW@cs.com]
Sent: Tuesday, August 08, 2000 4:51 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Lightning detector

Anyone out there know how to connect the VLF2002 lightning detector to a computer? I don't mind the $30 bucks for the detector but going to the next step at $120 to connect it to the computer is a bit much.

Jerry AE4XW

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(@H#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M`````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`D````4D4Z(%MW>'-I
M9UT@(%)%.B!,:6=H=&YI;F<@9&5T96-T;W(`*@P!!8 #``X```#0!P@`" `4
M`#L`-P`"`&\!`2" `P`.````T <(``@`% `W`"@``@!<`0$)@ $`(0```#0P
M0C,S1#,W-C(V1$0T,3%!.#4V,# P,$4X.4(S0S Y`/$&`0.0!@"L!P``(0``
M``L``@`!````"P`C```````#`"8```````L`*0```````P`N```````#`#8`
```

```
M`````$ `.0`@=FWEK0' `1X`< `!````) ```%)%.B!;=WAS:6==("!213H@
M3&EG:'1N:6YG(&1E=&5C=&]R``(!<0`!````%@`````' `:WE;3<]LT%M8A'4
MJ%8``.B;/ D``!X`'@P!````!0```%--5% `````'@`?# $````0````=VEL
M;$!B96%L<S4N8V]M``,`!A#785",`P`'$,\#```>``@0`0```&4```!*15)2
M63I)2$%614Q/3TM%1$%45$A!5%-%3E-/4D)%1D]214%.1$E425-!3$E+3$59
M0T%.1$E$051%249)159%4D=%5$%23U5.1%1/3$E'2%1.24Y'4U504$]25$9/
M4E0R,SA9``````(!"1 !````B@0``(8$``" !@``3%I&=4N]DUH_``H!`P'W
M`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+
M`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V! ;F<Q,#,S"Z8@XDH$D')Y.@JB
M"H0*@$1)( ]P=F4@"0!OTFL)@"!A!4!T#W %0/</H " !;%B`1 %L!A@`' ]
M&-!I!4 $`!C@&'!I:R!L97D@8QI1:637&/ 88 :0(!@091A0!< N9P^P&. #
M8'4:871O<1L!9VAT`P`6`!E@=11P< D1(!H!(%0RZ#,X+A=:60A@&W (8)YL
M&- `P!BP&H(Q+0/PRQHA!:!M"K!T:0)@&&!+$3 /L'0;8&5A`)!LO1M@8AM@
M&#$>`AJ19 40?QA1&2 A@ATP&_ %P N <-YU!4 "("5Q&&!O'# D8MY$!T +
M8 0@(3!7(60DQ/,/8 4@<RP9T"51&2,:P=D1,&]B`: C`6\<@12PH2: +B @
M0BD0)P0@UQO (L EXF\%,&\@40M0^R.3&M)G&) :<2JA*!09H-\'@"6R#W $
M(!UQ=P40&_$_+2(@00$`'6(DHQD0:6/.:P0@)8$D8E!#*@$8$)QA;25Q(P$:
M\$1/!?#?*/$)P##@!X %P'<D<!HA\1@0:VYO!^ :D2!4&>#O(_ EL2@4&>!Y
M`B =41DQWR@0&2 >`00@',)T!1 OP#IY'TM)'# TP" P:G7Z<P5 =P!P,U,"
M,!K1-..S,%(:L6XG!4 EP&,'D/IS"L!Y-5(RD@K )(@$85\@< >1&2,O1"5
M; ^@<_TJ`50D<!MC,\(80 MP"V#W(A(>PAY <@M0-] >L MP_G(C`0]@(L +
M4!M@+2(A\'\'@1]+`_ F@!=:"O0;$#,^-@% %: !0"CQ&_!C=*$0=#$V("U$
MXD\%$/YG"X '0 70.A(<P$3C%U8/0_1#P0L30_9I+3$TQC0!0!L0,3@P`4 ,
MT'%(@V(@1@-A%T ,DF(!%M5*044T6%= !F,],"&A(%M3353D4#I*KVU=%U5)
ML 9@:P(P2A=4"E!S&] Z84'D=6<WTC X*! !T$D0H" T.C4Q#^!-36<$5&].
M.$%04B!7^E@&`' %D <Q`$ DT@>0%05 1QT1<$UH=6)J(T0A2A=;=W@`D&==
MP2H04D4Z($P=MP$`_T02!;!&CT>:0T0+MA=C"N/Y"H!!;C3!)=$H0S*2,O,V
M:#,1+Q-N.>%;8R!6_$Q&4 $18!VH5N8=8AKP[Q=4(:(E4 20/QQ!- $YL>9M
M%,$D4R0S#] H,"_"_Q[")&)>AR@R+# >`AUQ)&*=)<!X!4$78S?@97 8XOPD
M,1;!7'D:D6/%7\8:M.IB&I%M%1!H'TL6\P_@_TL2%UI&5R 2.O,(< EP`C!_
M0%)4@ 3R&> =4U6#&.!S_58@=P;0(L ]`$M07](/H-YR&%!+@A=445 @'3!L
M5^\98AC1&= 5X6L<8 # `Q$_'7(BP!A0(4!5DDAP-3?P,#=-0!L0-^ ], &0
MM1$P+@6P9Q=:$?$`=/ ```,`$! ``````P`1$ `````#`( 0_____T `!S"
M3$--K0' `4 `"#" 3$--K0' `0L``( (( 8``````, `````!&``````.%
M`````````P`"@ @@!@`````P ```````$8`````$(4````````#``6 "" &
M``````# ````````1@````!2A0``MPT```,`"8 (( 8``````, `````!&
M``````&%`````````'@`B@ @@!@`````P ```````$8`````5(4```$````$
M````."XP``L`)H (( 8``````, `````!&``````Z%`````````P`G@ @@
M!@`````P ```````$8`````$84````````#`"F "" &``````# ````````
M1@`````8A0```````!X`.( (( 8``````, `````!&``````#:%```!````
M`0`````````>`#F "" &``````# ````````1@`````WA0```0````$`````
M`````'@`Z@ @@!@`````P ```````$8`````.(4```$````!`````````!X`
</0`!````!0```%)%.B ``````P`--/TW``#3WX4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

86. [wxsig] T238 purpose

From: William Beals <will@beals5.com>
Date: Tue, 8 Aug 2000 20:51:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101555-2000.08.08-22.42.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

One clarification on the intent of the T238 board. Nothing in the hardware says it is a weather station. It has a 1-wire interface, UART, four user buttons, an LCD, and a reasonably high power micro. The only app for it now may be a weather station, but it could be used for anything else. All of the unused I/O pins are sent to headers, so you are not even limited to the I/O used by the current app.

During the boards development there was a significant amount of debate about if the debug interface should be "standard" and what to call the board. The debug interface is there for anyones code development and there is nothing about weather (or even APRS for that matter) in the boards description.

I kind of think it would be cool to use this board hooked up to a klunky old modem to detect water level at a remote stream up in the mountains (where I have a telephone) and be able to call in and find out the stream level from Denver. Nothing to do with one-wire, APRS, or even ham radio for that matter.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

87. [wxsig] Re: nothing-but-dots Matrix Display

From: William Beals <will@beals5.com>
Date: Tue, 8 Aug 2000 21:18:20 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101558-2000.08.08-22.43.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gary:

(It's those silent ones you hav to worry about :-))

There is a reason the LCD backlight still goes through the regulator. It
may not be the greatest, but...

The T238 kit does not come with its own wall-wart, so we don't know what
voltage you will be providing to the board ahead of time. It could be
anywhere from 7.5V to 14V (or worse). The safest way to provide support
for the backlight with any kind of wall transformer in that range was to
provide power to the LCD after the regulator and use it to ensure that you
don't tun the LEDs into NEDs (Noise Emitting Diodes). Having said that,
the cool part about the kit is you can modify it to your hearts content.
 My solution was to unplug the backlight (yea, cruddy solution!). If you
would prefer to supply power to the LCD backlight directly from your
wall-wart with the appropriately calculated resistor for your wall-warts
supply, it will certainly make for a much cooler regulator.

will

-----Original Message-----
From: GS [SMTP:gsanders1@bigfoot.com]
Sent: Tuesday, August 08, 2000 9:25 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: nothing-but-dots Matrix Display

Hi all....

I've been lurking, as I have a 1 wire weather station and have
been considering this project. The discussion of the voltage
regulator heat when using the LCD display has been interesting.

I admit that I haven't looked at the schematics closely, but I
do have one question/comment: Why run the LCD backlight through
the regulator at all? The voltage requirement isn't critical - all
it does is power some LEDs as I recall.

Why not just connect the backlight directly to the unregulated
supply source (using an appropriately sized current limiting resistor
of course)? That way, you can keep the backlight on all the time
without worrying about the regulator.

In reality it may not reduce the overall power consumption much, but
it does spread it out over more components. And it's easy to use a
BIG power resistor for backlight heat dissipation if necessary, and
an appropriately sized heat sink for the regulator (and keeps the
regulator quite a bit less stressed).

That's what I used to do when I had a HCS-2 home control system that
used a 4X20 backlit LCD display, and it worked well for years.

Gary Sanders WB0BZR

William Beals wrote:
>
> Jim:
>
> Cool on things running! The hot regulator is normal if the backlight is
> turned on.

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(A,#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`P````4D4Z(%MW>'-I
M9UT@4F4Z(&YO=&AI;F<M8G5T+61O=',@36%T<FEX($1I<W!L87D`[1 !!8 #
M``X```#0!P@`" `5`!(`% `"``0!`2" `P`.````T <(``@`%0`*``P``@`4
M`0$)@ $`(0```#1#0C,S1#,W-C(V1$0T,3%!.#4V,# P,$4X.4(S0S Y``0'
M`0.0!@#<"@``(0````L``@`!`````"P`C```````#`"8```````L`*0``````
M`P`N```````#`#8``````$ `.0" `+)WL ' `1X`< `!````, ```%)%.B!;
M=WAS:6==(%)E.B!N;W1H:6YG+6)U="UD;W1S($UA=')I>"!$:7-P;&%Y``(!
M<0`!````%@`````' `;!WLC<]LTUM8A'4J%8``.B;/ D``!X`'@P!````!0``
M`%--5% ``````'@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A#BZ+?M
M`P`'$ ,(```>``@0`0```&4```!'05)9.BA)5%-42$]315-)3$5.5$].15-9
M3U5(05943U=/4E)904)/550Z+2DI5$A%4D5)4T%214%33TY42$5,0T1"04-+
M3$E'2%135$E,3$=/15-42%)/54=(5$A%4D5'54Q!``````(!"1 !````K@<`
M`*H'``!@# ``3%I&=9R01I(_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#
M`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#
M8P!!"V! ;F<Q,#,S"Z8@<D<*P'DZ"J(*A J *(A)="<$('1H;P^@>B `D&P)
M\ 5 `B 'D7D5"& @#W!V&%!O('<[!; 7$" !H A@!4 Z+>0I*1=*5&@$D!B@
M! #E&H @"7!A<P(@&%$8H"!,0T0@8@#0:VS(:6=H!4!S= ,0`R#<9V\'D1A@
M`V!U'? =`QD)<&=U"V :``(N()H@&! @`, :<&YO!4 ^8AB@'1()P1_P!Y!T
M+!L=@!K +B)0&ST@5#+8,S@@%+ %0&0>HB#2?P6@!X :("/@'T CX 0@;\IW
M`Z!W!T!L+27 `""?(@`<T!H@&* D$&XG!4"V:R#0!^!W#W %0'8&\/T!D&<8
MH!F"`_ >82$1$3#J;Q1P9 N 9QGR'1(&X)<+$1J ' !A*F!O9AA0?P=Q(#0%
MH!_0*F A$0!P>0<G@!P2`U(@-RXU5ND9\C$T+5 H!;$:,0^@QBD@,2-"<V%F
M(=$EL8\:<!H!*108H75P< D1_RS !;$IXQVG)/,L02/!%-#W*M(EPAA0<@!Q
M,-$'@ 7 _PN &%$GH3-A*"$EP!A!+[C_,( FH##Q*<0=4B\`(< P]/<?IRPQ
M*F!U&)$CX1H!"?"?,% <(31#&8(FU'1U'/5<140$( N &@%..P(HS$YO! `8
MH$5M(^ >0*DI@41I!'%S+G)(&=#_*7(N\"E0-#,B`!T2!: &\'\I`"8A&H4=
M$B/2'%$9@F/_`Y$$80:0&G XM!F!!< JD;\`( 0@!: ",!CQ(#%-&G#_'- *
M0!Y '.$T]3J "U ?(#DQ#2AY'+ B``4`=63J9$-8(2YR22KP*%,KP^\1, $0
M-A0P4FP:<#7O'9CS*6 )<&-T21$LTT'C)<?[).1)TF$P< -@$3 ","' \TD1
M0-!L8Q_2"8 <D0"0_QXP!;$PTDO<!"!(U"(`(^%]*)-C!) !D N 21$`P&O_
M++$X`B" %1 ?0#[B,^$?J)\72BB2%TH*]!W0,S8!0#\5H % *1$AP$LP$'0Q
M-M0@+5@B3P409PN !T#_!= 'D"[P*"!8(Q=&5S17`=,+$U<V:2TMH#0!0!W0
M.#$X, % #-!;PV(@;D8#81<P#))B%M$%\%O 4TU44#IG+O 4T',$D%?@0&(=
MX (0(. N?22A71=%7/ &8 (P75=4V0I0<V0@H"(`01\@.' Y!4 P."(``=!<
M4" YECH3\ _@35_75&]@J$!!4%(@5U@&`'"_!9 ',2!00L%.X05 1Q\!8G!?
MV'5B:DLA75=;)'=X`)!G70?P93K5(,)H*7$M(B$M)! E459-'_ %$'@\T7,+
M47E_6<]:VE:$"[874PKC"H!('FD:@!Y@(E$B>TDG=JLJ`0GA( I <A2Q9R(`
M_34!21FR+"$MD"3A'"$FH/\?\!P!'B$?\$/".#)PXQ=$_V^S0J$`D 2!*7-H
MT 0@*1'_9Q(@,"-"*6 $\#AP`) <X?\JXDGA)]871#>8*I$O01P`_P.@.'!T
MA!TT=>%J4AFQ!""_;[,[066C*7%NG!J 9#QA[S0T<,0F\@D`;U)P*F$_Q.\$
M\!P``, >0&-"@0D`#Z!_4/(B(7"Q%T0D$'#4&3$@]G%A04.R+R2A!X!@@62P
M_F@:<$8P'/\>`1[F%T0W7?L_81Y@/RZC)]8)<(&@2P&_@F(<02;R!0%_05C1
M+6XB_VV5(^9TXC7S'- DP3KS<)._2Q%N,FV5%T2"PB#2:F'R_T*A&4!+,#$-
M2O<IM3J 'Z7_3K$71$C5'- (<%&P+=!Y)/<#D4U<`)!Z3K%.8!I0&/+_'= \
M82ER3N<71"KA*[$N0I^&@GBB88) EE)P97 Q#?]RDC,B@U$K$FV5)/(:LAHS
M?Y)S/Y=3SV\4`Z <H1W0=/]!8R"6"7$5$"$D*3 $D#,2\TE$= )U;04P0\)3
M`H $_XE\:D <H2I@(^$:LI^R00%?'"$DH3" &4 ",',@,$'_,J$CX!@Q'+$O
M@SAR'( 71/A"24=)-4[K'9AX@W7A_P"0"K!#LP:0(, %D%D2%Q!_<'$RH1=$
MDK^3Q'B#>3%K^S#'-Y@H.#*8`AA"=V^!D?\CX'$27Q!]X5D1'B%.X0^@_F0N
M<!L\'_ 8,2>#<, X<7\^(1H0@.%XTW#"*F$]<$/\4RT18!AP),%"H@-@`R!_
MI< >,'\0-#071+/S'( T_E@6P1V4!4!YR:K$43(%L/]^,B:@'F%/<T)!I. 7
M2A;R!P8"7K(@0%=",$):OE)5;HSQ'E$','T`0IWAM[-A5S(7-3YME<!@2@=P
M_[__"% _`1SC*7$$((,!`P#]%@`A+I08<)[B-[8<42#0_S/ 6-&J`3$<! #
```

```
M!CIP!*#O3K$"(")[69=9&9$*P#[!_Y0TD:)F\ 3R(1"T(V?S<(%M:(!W!M"_
M4D"D4CAQ<O]O@%^"&Y5$4LI7&+ )\+4R_P)@`'"M<'\1`Q$:`1C@</$')@!H
M`ENP-3<P-TV^0!W0'C"DX &0$3 N!; 69Q=*$?$`TO ```,`$! ``````P`1
M$ `````#`( 0_____T `!S#@W%=5KP' `4 `"##@W%=5KP' `0L``( (( 8`
M`````, ```````!&``````.%`````````P`"@ @@!@`````P ```````$8`
M````$(4````````#``6 "" &`````# ````````1@````!2A0``MPT```,`
M"8 (( 8``````, ```````!&``````&%`````````'@`B@ @@!@``````P ``
M`````$8`````5(4```$````$````."XP``L`)H (( 8``````, ```````!&
M``````Z%``````````P`G@ @@!@``````P ```````$8`````$84````````#
M`"F "" &``````# ````````1@`````8A0```````!X`.( (( 8``````, `
M``````!&`````#:%```!`````0`````````>`#F "" &``````# ````````
M1@`````WA0```0````$``````````'@`Z@ @@!@``````P ```````$8``````
M.(4```$````!``````````!X`/0`!````!0```%)%.B ``````P`--/TW``!9
!((4`
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

88. [wxsig] Reducing List Bandwidth

From: "Bill Hosking" <billh@inficad.com>
Date: Wed, 9 Aug 2000 9:22:25
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101659-2000.08.09-09.28.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

A brief thought on reducing list bandwidth(or clutter).
I'm one of those who prints the list digest, grabs my morning coffee, and reads on (through a fair amount of clutter).

In one of the last digests there were several messages that went on for at least 4 printed pages each, where the originator's comments were only 3-4 lines! The rest was repeated earlier messages.

Just for the heck of it, I timed myself. I snipped four+ pages of message text in about 25 seconds.

Join 'clutter snippers anonymous' (anonymously of course) and help snip out clutter.

:-)

73, Bill, W7JSW
{recently joined the 'working T238 board' club}

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

89. [wxsig] Re: 1994/MX614 support

From: Doug <dbuhrman@radiks.net>
Date: Wed, 09 Aug 2000 21:10:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101833-2000.08.09-22.16.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I agree that getting the 1-wire wx support stable is the top priority. I'm glad you are toying with the idea of looking at the MX614. On the Ver 10 release, I went onto your website to download the zip file and I keep getting an error that it can't find it on the server. Any ideas?
Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

90. [wxsig] Re: 1994/MX614 support

From: William Beals <will@beals5.com>
Date: Wed, 9 Aug 2000 22:42:36 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101841-2000.08.09-23.44.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

Oops, got caught on a case sensitivity problem with the server that didn't exist on my home machine.
Thanks for the catch. Fixed now.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Wednesday, August 09, 2000 9:11 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1994/MX614 support

I agree that getting the 1-wire wx support stable is the top priority. I'm glad you are toying with the idea of looking at the MX614. On the Ver 10 release, I went onto your website to download the zip file and I keep getting an error that it can't find it on the server. Any ideas?
Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(C$$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (```+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`C````4D4Z(%MW>'-I
M9UT@4F4Z(#$Y.30O35@V,30@<W5P<&]R= "/"@$%@ ,`#@```- '" `)`!8`
M*@`D``,`3P$!(( #``X```#0!P@`"0`6`"D`, `#`%H!`0F `0`A````1$%&
M14(U,#<R-39%1#0Q,4$X-38P,# P13@Y0C-#,#D`)0<!`Y &`)@&```A````
M"P`"``$````+`",````````,`)@``````"P`I```````#`"X```````,`-@``
M````0 `Y`."B\V>%`L !'@!P``$````C````4D4Z(%MW>'-I9UT@4F4Z(#$Y
M.30O35@V,30@<W5P<&]R= ```@%Q``$````6`````< "A6?S![7^VVXE$=2H
M5@``Z)L\"0```@`>#  $````%````4TU44 `````>`!\,`0```! ```!W:6QL
M0&)E86QS-2YC;VT``P`&$*<H9D(#``<0:@(``!X`"! !````90```$1/54<Z
M3T]04RQ'3U1#055'2%1/3D%#05-%4T5.4TE4259)5%E04D]"3$5-5TE42%1(
M15-%4E9%4E1(051$241.5$5825-43TY-64A/345-04-(24Y%5$A!3DM31D]2
M5$A%0T$``````@$)$ $```!V`P``<@,``+8$``!,6D9UC&*+)S\`"@$#`?<"
MI /C`@!C:,$*P'-E=# @!Q,"@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"
M@ J!=@B0=VL+@&3:- Q@8P!0"P-C`$$+8$!N9S$P,S,+IB!R1 A@9SH*H@J$
M"H!/@&]P<RP@9V\%0#1C81<0: 5 `B @89L8D0^@( ^@`(%T:11P*'1Y(!$P
M;P)@96UB( /P=&@@&Q 9DG(6=@20&S%A!4!D:61D;B<%0&5X! `8\VU=&E!H
M`W 9D #!: N 99 N("!4#W!N:P0@;P(0&](9D!B@= ]@'C%&!&EX"8 @;F]W
M+CL72@/P; E0%UD*]&QIO#,V`4 5H % &G%T!9!"=!!T,38@+20R3ST%$&<+
M@ = != 'D'-A_&=E)#,71B-$(Q$+$R-&8&DM,30T`4 BD#'<.# !0 S0)]-B
M'\ #80L7, R28A;4(%M330!44#ID8G5H<K$#@4!R81Q 'J N'A!\=%T712D`
M!F ","EG5T,)@!X0<V1A>1A 0>47$'4<X3 Y&$ !T"A@`" Y.C$Q(%!-"2OG
M5&\I9U1!4%(U+3!8!@!P!9 ',2!)+P(P!) 'D 5 1P-@=7 Q*^AU8FHC<2EG
M6W<2> "09UT'\&4Z( `Q.3DT+TU8-O<GT!F@,F!P"1$EWR;J(I3O"[874PKC
M"H!)&3 )PAODGR5@`D +@"H@&T(Q+0/P>PEP&N!X-789H &1&K @VP0`&S-T
M&! :86D%L!HQ:1XQ22<:T&<+8" 0>>\(8!DP.S$\\'DZ<AKR%T2+&T(<4&49
M0&]F( D`?F\4L2H@'!$;0C4C'C%/VP.@&T)6&\$6(" )<!JP_QEQ&$ QD!K@
M+($9`3SP/F)[!<!#T&(9X3S2'# @0&[O"0`^01M!%T1Z!2 >P ,0[QF0`' @
M$#E@:PG@/1 Z-O\#D020`V ;U1GP&)$<<B>@GT<Q23$9$1M('C%!;AI0&4!"
M<S\71"GS2S!$7%-0(7X*@"6G63Z%8_<(< EP`C!L&E U@$3@!0%>8B !1$$T
M(QDP<S2P=R,&T$!@;'- !:!M<#LN(!N2+E&Q%T0O\"!U_P" 3\89HB 0&4 "
M8!Z!'*#_`, #$41!0S$;L#L`-#(GP, U-S W34 BD!S@URN `9 1,"X%L&<7
M2A'Q`@!84 ```P`0$ `````#`!$0``````,`@!#_____0 ``,. ^B$N%`L !
M0 `(,. ^B$N%`L !"P``@ @@!@``````P `````````$8``````X4`````````#
M``* "" &``````# `````````1@`````0A0`````````,`!8 (( 8``````, `
M``````!&`````%*%``"W#0```P`)@ @@!@``````P `````````$8``````84`
M```````>`"* "" &``````# `````````1@`````!4A0```0`````0````X+C `
M"P`F@ @@!@``````P `````````$8`````#H4`````````#`"> "" &``````#
M`````````1@`````1A0`````````,`*8 (( 8``````, `````````!&`````!B%
M`````````'@`X@ @@!@``````P `````````$8``````-H4```$`````!`````````
M`!X`.8 (( 8``````, `````````!&`````#>%```!``````0`````````>`#J
M"" &``````# `````````1@`````XA0```0````$`````````'@`]``$````%
5````4D4Z( `````#``TT_3<``-5U
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

91. [wxsig] Re: 1994/MX614 support

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 10 Aug 2000 07:27:54 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101890-2000.08.10-07.34.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
>
> Doug:
>
> Oops, got caught on a case sensitivity problem with the server that didn't exist on my home machine.
Thanks for the catch. Fixed now.

Bad windoze machine/OS. Bad, bad. ;-)

73, gerry (known linux bigot)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

92. [wxsig] Busy week.

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Thu, 10 Aug 2000 09:19:50 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101908-2000.08.10-09.27.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greetings,
Sergeant Jack Smith was kind enough to sell me his WX1 kit and I now have a
fully functional station after integrating the sensor array to the T238 kit
I had just finished assembling and testing.
-Thanks again Sergeant!

My dance card is horribly full for a couple months, but at least the
potential is there to get back on track with RF/ESD susceptibility and
Emissions testing of the Wx1/T238 combination. I'm just curious enough
about this to forge ahead with testing (in between these pesky work tasks).

Tuesday 8/8/00 I officially joined the Amateur radio community by passing
the Element 2 exam. I bombed by 3 the Element 1 (General) exam and my mind
is too full of school to cram CW into it for a while, but at least I am now
a Technician (presently without call sign though). I had not studied for
the General, so when asked what ITU the African/European nations are, I came
up blank :^p Ask me any question about RF theory and I'm hot, but ham
protocol and specifics -I'm still a bit fuzzy. My wife is an Extra with
Commercial (wow!). [I've been a TECHNICIAN for 25 yrs, but not a Ham-Tech.
. .horse hockey!!]

-pardon my bandwidth

Kyle

93. [wxsig] Re: Busy week.

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 10 Aug 2000 09:39:54 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101911-2000.08.10-09.43.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Congrats Kyle, looking forward to seeing your Wx station on the air when you get your ticket. Believe
it or not, the commercial exam has even more protocols and specifics on it than the amateur tests, at
least it did when I passed the test in 1989. In my opinion, the Amateur Advanced was WAY tougher than
the commercial exam on theory. The code requires time and lots of practice, its just one of those
things that has to be "hard wired" into your brain.

I have had no problems I am aware of with RF on my T238, although my error counters have a few blips per
 day. I am running about 100' of thermostat 5 wire, and a little RF choke (left over from some other
project) clamped around cable going into the T238.

Rich Beckwith - Wn0x

>>> kehler@lsil.com 08/10/00 09:19AM >>>
Greetings,
Sergeant Jack Smith was kind enough to sell me his WX1 kit and I now have a fully functional station after integrating the sensor array to the T238 kit I had just finished assembling and testing.
-Thanks again Sergeant!

My dance card is horribly full for a couple months, but at least the potential is there to get back on track with RF/ESD susceptibility and Emissions testing of the Wx1/T238 combination. I'm just curious enough about this to forge ahead with testing (in between these pesky work tasks).

Tuesday 8/8/00 I officially joined the Amateur radio community by passing the Element 2 exam. I bombed by 3 the Element 1 (General) exam and my mind is too full of school to cram CW into it for a while, but at least I am now a Technician (presently without call sign though). I had not studied for the General, so when asked what ITU the African/European nations are, I came up blank :^p Ask me any question about RF theory and I'm hot, but ham protocol and specifics -I'm still a bit fuzzy. My wife is an Extra with Commercial (wow!). [I've been a TECHNICIAN for 25 yrs, but not a Ham-Tech. . .horse hockey!!]

-pardon my bandwidth

Kyle

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

94. [wxsig] Son of T-238 (plus)

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 11:20:47 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "W2FS John Hansen" <john@hansen.net>, "Steven R. Bible" <srbible@gate.net>
Message-ID: <LYR15067-101921-2000.08.10-10.27.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have been speaking with SteveB and putting some other ideas out on the SIG for awhile. I have decided to undertake a 'next step' with the T-238 controller and after some extended dialog with SteveB, I began looking at it last night. Basically what I am doing is starting with the current T-238 design and doing the following:

 - shrink the PCB down at least enough that it will fit in the far less cavernous Rat Shack 4x6x2 enclosure (right now it 'just misses', requiring the 'way too big' 5x7x3 box

 - remove the debug crystal, the jumpers, the DB9, and simplify the associated traces

 - remove the onboard switches bringing them out by the header only

 - provision for two onboard iButton receptacles

 - add a second RJ-11(One-Wire) connector in parallel (random thought, what say???)

 - modify the current firmware to offer assembly time options for 20x4, 20x2 displays, which much cheaper and more than adequate for most setups, or even display-less (see "serial program/setup" comment below)

 - right angle PCB mount of the power/reset button next to the power connector so whole board can mount in a slim line case in a 'displayless' implementation

 - provision for MX614 modem chip - this will need of course a radio interface
     - suggestions on a connector ?????
     - how far to take interface, just bring out TxD,RxD,Gnd,PTT?
     - put interface circuitry on board?
     - small proto area for interface?

 - MX614(modem chip for 1200 bd AFSK) - interface to Serial port on the

68HC908 or 'bit bang' - comes down to which is easier to generate the
NRZI (I need to talk to John Hansen, W2FS, about this)

 - modify current firmware to permit serial line programming/setup (no
display attached), then tell it "RUN" and 20 seconds later it re-inits
the serial line for its designated baud/config and starts dumping its WX
data down the serial line. Long enough to switch cable to the TNC or
change jumpers from serial out to modem out (if we hook the the MX614
to the serial output; no change of jumpers or cables at all if we bit
bang the modem output) This concept is specifically aimed at having a
board/firmware package for remote use where operating modes are rarely,
if ever, changed and there is noone there to see any data displays. It
would be a trivial matter to program it to send an APRS "telemetry"
frame once an hour with the error counts, and for that matter a simple
A/D circuit or maybe one of the "One-Wire" family battery management
hips to read battery voltage and add that to the error report.

 OK ... I had my say ... comments?? more ideas??? criticism??? Anyone
interested in collaborating? I plan to fund the alpha PCBs. I spent
three hours last night (very) roughing out the new board using
PCBExpress. I figured a rough cost of about $120 ($30/apiece) for four
boards, any help there will be gratefully accepted. I managed to scarf
up the one last Beta Kit from Steve (someone had ordered it then got
caught out by DalSemi and wasn't able to get a WS-1!) I will build this
kit all of the above in mind. When done, I will turn the design over to
TAPR.

 73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

95. [wxsig] Error Counters

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 11:31:08 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101922-2000.08.10-10.36.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I have had no problems I am aware of with RF on my T238,
 > although my error counters have a few blips per day. I am
 > running about 100' of thermostat 5 wire, and a little RF choke
 > (left over from some other project) clamped around cable going
 > into the T238. Rich Beckwith - Wn0x

My T-238 has been running untouched for at least 6-7 weeks. I just
checked error counts and had 2 counts for the Wind direction, that is it
...

How often do the error counters reset themselves and start over. I
remember seeing a few counts in other columns once before.

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

96. [wxsig] Thermochrons vs. DS1994

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 11:39:17 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101925-2000.08.10-10.45.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You know I was thinking about these two iButtons, it would seem that a
Thermochron is nothing more than a 1994 with a temp sensor and some
extra programming. It would seem that the Thermochron has more memory
than the 1994, but in essence they seem to be nearly the same chip. My
guess is the Thermochron saves date/time, as an integer offset from the
'mission start time' in units of the sample interval. I know you can do
a 'temperature now' read of the Thermochron, but I wonder if you can do
a date/time read ... I think you must since it displays the date/time in
the iButton viewer and lets it be set. The 1994 and the thermochron are

nearly the same price. It makes me wonder if there isn't some other
aspects of the thermochron that we can make use of. Maybe put a
thermochron on the board for its RTC and temp sensor and add a larger
capacity memory button on as well and store months of data ... just
random thoughts ...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

97. [wxsig] Re: Son of T-238 (plus)

From: David Fullmer <fullmer@tera.com>
Date: Thu, 10 Aug 2000 09:02:29 -0700 (PDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101927-2000.08.10-11.08.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian,

  I'm an electronics engineer with many years of laying out PCB's on a contract
basis (on the side). Although I haven't done much of this for the last few
years, I still have the tools at home and would love to help out on this project
if I can. Please let me know if I can help out on this. I've done both surface
mount and thru-hole type work. My fee would be one blank board when they're run
-- that's it.

  BTW - I like your idea of the second RJ-11 (what a concept!).

> From: "Brian B. Riley" <brianbr@wulfden.org>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Cc: "W2FS John Hansen" <john@hansen.net>, "Steven R. Bible" <srbible@gate.net>
> Subject: [wxsig] Son of T-238 (plus)
> Date: Thu, 10 Aug 2000 11:20:47 -0400
>
>
> OK ... I had my say ... comments?? more ideas??? criticism??? Anyone
> interested in collaborating? I plan to fund the alpha PCBs. I spent
> three hours last night (very) roughing out the new board using
> PCBExpress. I figured a rough cost of about $120 ($30/apiece) for four
> boards, any help there will be gratefully accepted. I managed to scarf
> up the one last Beta Kit from Steve (someone had ordered it then got
> caught out by DalSemi and wasn't able to get a WS-1!) I will build this
> kit all of the above in mind. When done, I will turn the design over to
> TAPR.
>
> 73 de brian
>
> --
> N1BQ-3 @ 44 31.73N 072 51.55W
> WideN-N digi and weather station in Underhill Center, VT
> <n1bq@amsat.org>
>
>

David Fullmer
CRAY Incorporated
desk 206-701-2077
cell 206-423-8404

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

98. [wxsig] Re: Son of T-238 (plus)

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 10 Aug 2000 11:34:27 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: <srbible@gate.net>, <john@hansen.net>
Message-ID: <LYR15067-101930-2000.08.10-11.37.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I like the idea of a T238-Jr;

I am having a little trouble finding cases for the T238 that look nice and don't take up a lot of space
AND incorporate the existing switches. I hope to find a combination of boxes that will let me do an "L"
configuration, with the switches mounted in the base where they are easy to press, where the DB9s are

easy to get to in back and the display is mounted verticaly so it is easy to see from across the desk/room.

I would also like a configuration that is more "remote" friendly. A smaller display (I will only use for testing/status) and the built in Modem means I only have to come up with another radio! I must admit that my primary interest in the T238 at this time is Wx, and setting up remote Wx monitoring for our local SkyWarn project, so a T238-Jr is appealing.

For prototyping/experimenting with 1-wire I think the existing board will work quite well. A slimmer model with built in modem works great for a a project like remote Wx monitoring, remote Solar/Wind monitoring etc.

- Shrink PCB: Yes, the readily available Radio Shack 4x6x2 case would be a great target case.
- Remove Debug Xtal etc: Yes, I will do my design work on the T238-Sr
- Onboard switches to header: Present height of switches is low enough they shouldn't interfere with case. I do like having them available for test/setup when the unit is out of the box.
- Second RJ11: Yes, even 3 ports would be fine by me.
- Cheaper smaller displays would be great for units I will only check on every month or so
- Reset on back: Yes
- MX614: Yes. TNC's are expensive (Check out www.byonics.com (PeekPak), how does he do this with a pic? One thing to consider, some of my remote stations will become Digi's so I will end up with a TNC anyway.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

99. [wxsig] New T238 user thoughts

From: "Bill Hosking" <billh@inficad.com>
Date: Thu, 10 Aug 2000 14:2:43
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101967-2000.08.10-14.09.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Got my T238 fully functional last night and started thinking about
packaging - that's going to be an issue I think. I would like to see a more
compact board and Brian's ideas seem sound.

Will - I don't get the position menu? I don't have a tnc hooked up right
now but don't see in code or instructions where it has to be there for
position menu to come up.

In terms of add-ons for pwb, I'd like to see a transistor sw in the
backlight line - I plan to add one in the b/b section to turn backlight off
when I lose charger below:

```
   charger-->battery-->T238
           |______> sensor line to turn backlight off
```

Now, the only thing I'm not looking forward to is cutting a hole for the
display - oh well.

73, Bill W7JSW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

100. [wxsig] Re: New T238 user thoughts

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 10 Aug 2000 14:15:17 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101969-2000.08.10-14.19.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Check your software version. V1.09.1 adds the ability to edit position, V1.10.1 adds DS 1994 support (Time) and fixes some bugs. I believe the units shipped with V1.08. I like your idea on turning off the backlight during power loss, but keeps unit running.

>>> billh@inficad.com 08/10/00 02:02PM >>>
Got my T238 fully functional last night and started thinking about
packaging - that's going to be an issue I think. I would like to see a more
compact board and Brian's ideas seem sound.

Will - I don't get the position menu? I don't have a tnc hooked up right
now but don't see in code or instructions where it has to be there for
position menu to come up.

In terms of add-ons for pwb, I'd like to see a transistor sw in the
backlight line - I plan to add one in the b/b section to turn backlight off
when I lose charger below:

```
   charger-->battery-->T238
           |______> sensor line to turn backlight off
```

Now, the only thing I'm not looking forward to is cutting a hole for the
display - oh well.

73, Bill W7JSW

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

101. [wxsig] RE: Son of T-238 (plus)

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 15:38:14 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101976-2000.08.10-14.44.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: Rich Beckwith [mailto:Rich@dps.state.mo.us]
> Sent: Thursday, August 10, 2000 12:34 PM
>
 [snip]

> - MX614: Yes. TNC's are expensive (Check out
www.byonics.com (PeekPak), how does he do this with a pic? One thing to
consider, some of my remote stations will become Digi's so I will end up
with a TNC anyway.

 Byon does his modem stuff with PWM capabilities in that PIC.

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

102. [wxsig] RE: Son of T-238 (plus)

From: Steve Dimse <sdimse@netrox.net>
Date: Thu, 10 Aug 2000 15:59:21 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101979-2000.08.10-15.05.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 8/10/00 3:38 PM Brian B. Riley (brianbr@wulfden.org) wrote:

>> - MX614: Yes. TNC's are expensive (Check out
>www.byonics.com (PeekPak), how does he do this with a pic? One thing to
>consider, some of my remote stations will become Digi's so I will end up
>with a TNC anyway.
>
> Byon does his modem stuff with PWM capabilities in that PIC.
>
No, the 16F84 does not have PWM. (The original Mic-E did use PWM.) This
project uses a resistor ladder to generate the waveform.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

103. [wxsig] RE: Son of T-238 (plus)

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 16:23:21 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101993-2000.08.10-15.29.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

yeah, Steve is right, there is out there one othe PIC based
TinyTrak-like units that does use PWM. I forgot that just about all of
Byon's stuff is 16F84 based.

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Steve Dimse
> Sent: Thursday, August 10, 2000 3:59 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Son of T-238 (plus)
>
>
> On 8/10/00 3:38 PM Brian B. Riley (brianbr@wulfden.org) wrote:
>
> >> - MX614: Yes. TNC's are expensive (Check out
> >www.byonics.com (PeekPak), how does he do this with a pic?
> One thing to
> >consider, some of my remote stations will become Digi's so I
> will end up
> >with a TNC anyway.
> >
> > Byon does his modem stuff with PWM capabilities in that PIC.
> >
> No, the 16F84 does not have PWM. (The original Mic-E did use
> PWM.) This
> project uses a resistor ladder to generate the waveform.
>
> Steve K4HG
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

104. [wxsig] MX614/PICs

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 16:33:53 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-101995-2000.08.10-15.39.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: Steve Dimse
> Sent: Thursday, August 10, 2000 3:59 PM
>
> On 8/10/00 3:38 PM Brian B. Riley (brianbr@wulfden.org) wrote:
>
>>> - MX614: Yes. TNC's are expensive (Check out
>>www.byonics.com (PeekPak), how does he do this with a pic?
>>
>>One thing to consider, some of my remote stations will become Digi's
>>so I will end up with a TNC anyway.
>>
>> Byon does his modem stuff with PWM capabilities in that PIC.
>>
> No, the 16F84 does not have PWM. (The original Mic-E did use
> PWM.) This project uses a resistor ladder to generate the waveform.

 Actually we were both wrong. TinyTrak uses the 16F84/10P and a
resistive ladder to generate outbound modem tones and simple energy
detect as reciever for DCD, as Steve said, but the PeekPak actually uses
a MX614 and a 16F84/10P to decode/display UI frames.

73 de brian
--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

105. [wxsig] Re: Son of T-238 (plus)

From: Doug <dbuhrman@radiks.net>
Date: Thu, 10 Aug 2000 17:25:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102014-2000.08.10-18.31.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was heading down the same path. I just finished a layout using the ExpressPCB software and shrunk it down to 2.9x2.4 inches. I was going to have 8 boards made for around $130. I kept the LCD, switch, and misc I/O headers the same. Replaced the DB9s with 10 pin headers. Used surface mount parts for the ICs. As for your extras.... I like the iButton receptacles. I also looked at a second port for the 1-wire. I went the route of a Phoenix connector. There were times I wanted to strip some wires and hook it up. That way I didn't have to mess around with RJ-11 connectors on odd sized wire. As I've already stated I sure would like this thing to have the TNC on-board. I would like to be able to put a few out-of-the-way stations and so the complete stand alone package appeals to me.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

106. [wxsig] RE: Temp Shield

From: Doug <dbuhrman@radiks.net>
Date: Thu, 10 Aug 2000 18:38:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102022-2000.08.10-19.44.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here are some pictures of the temp shield that I built. Pardon the holes in the central .75" pipe I had other ideas when I started and before I found these aluminum vents. In a nutshell..... I glued a short 3/4 PVC pipe to a threaded section then glued that piece to a 2" PVC end cap with a hole in the center, then I placed some adhesive backed foam to the outside of the end cap so that the vent would have a snug fit. I used a couple of sheet metal screws just to make sure it would stay. It gets pretty windy on the acreage as I'm on top of a hill. Let me know if you have any questions.

Doug K0DSP
[Attachment: Mvc-001e.jpg; image/jpeg; 7,672 bytes]
[Attachment: Mvc-004e.jpg; image/jpeg; 9,375 bytes]
[Attachment: Mvc-003e.jpg; image/jpeg; 9,033 bytes]

107. [wxsig] Re: Son of T-238 (plus)

From: "Byon Garrabrant" <byon@mail.com>
Date: Thu, 10 Aug 2000 18:56:52 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102036-2000.08.10-21.05.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 10 Aug 00, at 11:20, Brian B. Riley wrote:

> Anyone interested in collaborating?

I am.

BTW, I was planning on adding some one-wire interfacing to
TinyTrak, but don't know when I will get around to it. Also, I am
running out of code / memory space, so a new device may be in
order. I will eventually need to learn the best WX format for APRS.
I have talked to the DS1621 (I think) temp chips, and may try to
make room for one of the 3 pin temp chips on the PCB.

73,
Byon

_____
Byon Garrabrant N6BG byon@mail.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

108. [wxsig] RE: Temp Shield

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 22:01:29 -0400

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102038-2000.08.10-21.07.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I like that solution ... me, I am a mess with tin snips!!!!! I am much
better with hacksaw and my hot glue gun!!!!!

  73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: Doug
> Sent: Thursday, August 10, 2000 8:38 PM
>
>
> Here are some pictures of the temp shield that I built.
> Pardon the holes in the central .75" pipe I
> had other ideas when I started and before I found these
> aluminum vents. In a nutshell..... I glued
> a short 3/4 PVC pipe to a threaded section then glued that
> piece to a 2" PVC end cap with a hole in
> the center, then I placed some adhesive backed foam to the
> outside of the end cap so that the vent
> would have a snug fit. I used a couple of sheet metal screws
> just to make sure it would stay. It
> gets pretty windy on the acreage as I'm on top of a hill.
> Let me know if you have any questions.
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

109. [wxsig] Re: Son of T-238 (plus)

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 10 Aug 2000 22:11:42 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102040-2000.08.10-21.17.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: Doug
> Sent: Thursday, August 10, 2000 7:25 PM
>
> I was heading down the same path. I just finished a layout
> using the ExpressPCB software and shrunk it down to 2.9x2.4
> inches. I was going to have 8 boards made for around $130.
> I kept the LCD, switch, and misc I/O headers the same.
> Replaced the DB9s with 10 pin headers. Used surface mount
> parts for the ICs. As for your extras.... I like the iButton
> receptacles. I also looked at a second port for the 1-wire.
> I went the route of a Phoenix connector. There were times
> I wanted to strip some wires and hook it up. That way I
> didn't have to mess around with RJ-11 connectors on odd
> sized wire. As I've already stated I sure would like this thing
> to have the TNC on-board. I would like to be able to put a
> few out-of-the-way stations and so the complete stand alone
> package appeals to me.

 I'm really glad to see there are other thinking along these lines. I
dunno about the rest of you, but the more I work with these
iButtons/One-Wire the more fascinated I get ...

  I am sure I could get the board down nearly that small is well if I
tried, but as with most ham/hobbyists etc, I want to stay away from
surface mount like it had the plague! These old hands and fingers of
mine have been broken a few too many times to be doing that kind of fine
work for any duration.

I think the gains of 10 pin header vs onboard DB9s is small against the
hassle of a ribbon and connector. I like the idea of a way to hookup
one-wire with a strip is good, but if you look at my web page
<http://www.wulfden.org> and look at my T238 page you will note where I
connect out of the RJ11 on the T-238 with a Rat Shack 12 inch RJ-11 male
to four spade lugs cable to a terminal block, easy enough for quick
attachments etc.

The TNC aspect will happen soon, I am going to work on it and then see
if Will can squeeze it into the code along with his other tasks ... he

is very right about working on other sensors, we badly need the humidity
an barometric sensors to make this really legitimate. Will have you
tried loading the One-Wire with a number of other devices and tried to
get a handle on at just what point you run out of time to sample them
all in one 5 second weather sample cycle?

I received my second WS-1 today, the one I bought from Paul Womple today
I expect to have it on the air in the next two weeks as N1BQ-4 at a
'suburban' (as opposed to my mountain location) location about 6 miles
as the crow flies from here and some 8-900 feet lower in altitude.

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

110. [wxsig] RE: Temp Shield

From: Boyd Prestwood K5YKG <k5ykg@bellatlantic.net>
Date: Thu, 10 Aug 2000 22:40:08 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102045-2000.08.10-21.46.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug wrote:
>
> Here are some pictures of the temp shield that I built. Pardon the holes in the central .75" pipe I
> had other ideas when I started and before I found these aluminum vents. In a nutshell..... I glued
> a short 3/4 PVC pipe to a threaded section then glued that piece to a 2" PVC end cap with a hole in
> the center, then I placed some adhesive backed foam to the outside of the end cap so that the vent
> would have a snug fit. I used a couple of sheet metal screws just to make sure it would stay. It
> gets pretty windy on the acreage as I'm on top of a hill. Let me know if you have any questions.

Prime it and paint it WHITE. That's the best color to reflect direct
light, causing heat, from the sun. Otherwise, looks great... gonna try
it myself using the Peet U-2000 temp and humidity sensor! Thanks for the
images.

73 de Boyd Prestwood K5YKG
Southern New Jersey

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

111. [wxsig] Temp Shield/Smaller PCB/TNC-TinyTrak/BP-Humidity

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Fri, 11 Aug 2000 09:13:45 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102109-2000.08.11-09.18.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Temp Shield:
Thanks for the Temp Shield pics. I can't believe I was looking at the same darn vent pipe yesterday at
lunch! I couldn't figure out how I would mount the thing and I think you have a good solution. I would
 paint it white for maximum reflection, however.

T238-Jr:
I really like the idea of a smaller PCB, but I don't think I would give up the onboard DB9s. Don't know
 if you have messed with them lately, but mounting/cutting DB9s is a pain. I built Byon's TinyTrak and
PeekPak projects, and placing the DB9s somewhere handy, and making the project look professional was
tough. Punchs for DB9s are also VERY expensive. The nice thing about the current T238 board layout is
that you can cut a large rectangular opening on the back of the case which will accomodate all the DB9s
and the power connector at once.

TNC - TinyTrak:
Byon's TinyTrak is pretty cool if you guys haven't had a chance to take a look. A very inexpensive GPS
Decoder/RF Encoder and it works great! We are using one for our upcoming MS150 (Mulitple Sclerosis)
Bike-a-thon to track SAG wagons along with our other traditional stations. Amazing for a device that was
 only US $25.

BP-Humidy Sensor:
For those that are interested, I will have my PC board for a 1-wire BP sensor done shortly. I am
reviewing the board layout now and hope to have boards to test in the next week or so. The board was
designed to support the surface mount and Unibody versions of the Motorola MPX4115A BP sensor. Its
based on the DS2438 (Battery Monitor) which to the best of my knowlege is the chip DalSemi will base

their Humidy Sensor and BP sensors on. Looks like the cost of the BP sensor will be about $35 if you use the on-board LS7805, caps, board etc. BTW can't get away from surface mount on this one, the DS2438 is a SOIC package. It is expected you will mount the device in the same cabinet as your T238, so it is not necessary to have a separate power supply. The MPX4115AP (Notice the "P") is the version of the sensor that you can attach a tube to, that can be run outside if you are concerned about indoor/outdoor variations.

Keep in mind, there is no BP or Humidy sensor support from DalSemi or the T238 at this time. I will be more than happy to provide the conversion algorithms and/or the VB source code I have if your are interested in playing with this device. If we end up with DS2438 support on the T238 I can start work on a humidity sensor. This may not be necessary if DalSemi comes out with there BP sensor in October, but it may not hurt to have other options. The Humidity sensor will require some sort of parasitic 1-wire power supply or remote power. It is also a more expensive sensor ($35) compared to $21 for the BP sensor.

Regards,

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

112. [wxsig] Multiple One-Wire Connections - inexpensive 5 port adapter

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 11 Aug 2000 20:03:59 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102213-2000.08.11-19.10.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

It was mentioned earlier that the double RJ-11 adapter is too tight of a fit on the T-238, with the coaxial power connecter and the DB9 to the TNC crowding it out. Obviously that rules the triple adapter out as well. I had the answer sitting here the whole time and it took my several d'uhs followed be several slaps to the forehead to realize it .. Radio Shack part #279-410A is "5-Outlet Modular Adapter" that works just fine, no line inversions, every jack works, I check it against my DS9097 and the Blue Dot receptacle with the iButton Viewer, then against my T-238.

It is a about 1" wide by 4" long body with 5 RJ-11 receptacles with a rugged four foot or so cable with an RJ-11 modular plug. All four contacts (red, green, yellow, black) are wired straight through. It has two pieces of foam tape on the back as well as two tabs for screwing to a wall. I uploaded a picture to my website ...

   <http://www.wulfden.org/WXStation/WXpix/OneWireAdapter.jpg>

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

113. [wxsig] RE: Multiple One-Wire Connections - inexpensive 5 port adapter

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 11 Aug 2000 20:14:27 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102219-2000.08.11-19.21.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was looking at he message retruend to me, and even though the URL worked for me

      <http://www.wulfden.org/WXStation/WXPix/OneWireAdapter.jpg>

I did not capitalize the "P" in "WXPix" some browsers/server may take offense at that if the link in my first message didn't woirk, this one will ... sorri!

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT

<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

114. [wxsig] RE: Temp Shield

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 11 Aug 2000 20:30:00 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102220-2000.08.11-19.36.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have been going with the DS1820 inside the WS-1 housing until I was
ready to build the temp housing. Richard's Temp Shield is just what the
doctor ordered for us Tin-shears-impaired persons. I went out and picked
up the pieces today ... now ... BIG QUESTION ... Neither the pictures
from the SIG nor the ones on the web site show up-close the detail of
the actual sensor mount. The DS18S20 is a tiny package with 3 wires, I
have the +5 on my O-W bus to power it for better conversions, that is no
problem, but:

   (1) what is used as a "receptacle" for the chip?

   (2) How to protect the exposed wire surfaces?
      - Trim them down before inserting?
      - Goop it with slight covering of silicone?
      - Hot glue it (will the heat be too much for the chip)?
      - Leave it exposed?

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

115. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: David Norris <dave@webaugur.com>
Date: Fri, 11 Aug 2000 20:24:07 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102225-2000.08.11-20.30.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:
> It was mentioned earlier that the double RJ-11 adapter is too tight of a

Why not use RJ-25 with a multiline adapter? A multiline adapter will
break a RJ-14 or RJ-25 out to two or three RJ-11s. That would give you
6 contacts instead of the 2 contacts on an RJ-11.

The same sort of thing could be done with a RJ-45 going to a break-out
box. That is how the Peet Bros Ultimeter connects most of the sensors.
The breakout box also acts as a grounding block and power distribution
point.

> It is a about 1" wide by 4" long body with 5 RJ-11 receptacles...
> All four contacts (red, green, yellow, black)...

Someone is confusing connectors. RJ-11s don't have 4 wires. RJ-14 has
four wires. 11, 14, and 25 have 2, 4, and 6 wires respectively in the
same modular shell. Radio Shack, in particular, is very good about
pointing out the distinction.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

"I would never belong to a club that would have me as a member!"
                                          - Groucho Marx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

116. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Fri, 11 Aug 2000 20:32:59 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102229-2000.08.11-20.39.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

David Norris wrote:
>
> "Brian B. Riley" wrote:
> > It was mentioned earlier that the double RJ-11 adapter is too tight of a
>
> Why not use RJ-25 with a multiline adapter? A multiline adapter will
> break a RJ-14 or RJ-25 out to two or three RJ-11s. That would give you
> 6 contacts instead of the 2 contacts on an RJ-11.
>
> The same sort of thing could be done with a RJ-45 going to a break-out
> box. That is how the Peet Bros Ultimeter connects most of the sensors.
> The breakout box also acts as a grounding block and power distribution
> point.
>
> > It is a about 1" wide by 4" long body with 5 RJ-11 receptacles...
> > All four contacts (red, green, yellow, black)...
>
> Someone is confusing connectors. RJ-11s don't have 4 wires. RJ-14 has
> four wires. 11, 14, and 25 have 2, 4, and 6 wires respectively in the
> same modular shell. Radio Shack, in particular, is very good about
> pointing out the distinction.

I just checked, and my RJ-11's are all 2-pair... RJ-45's are 4-pair,
RJ-25's are 3-pair. I've not met RJ-14's but I'll certianly look, now!

73, gerry n5jxs
--
Gerry Creager gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

117. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: David Norris <dave@webaugur.com>
Date: Fri, 11 Aug 2000 21:28:45 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102234-2000.08.11-21.35.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gerry Creager N5JXS wrote:
> I just checked, and my RJ-11's are all 2-pair... RJ-45's are 4-pair,
> RJ-25's are 3-pair. I've not met RJ-14's but I'll certianly look, now!

By golly you're right, RJ-11s should normally be two pair. I keep
finding RJ-11s that are only 1-pair. RadShack et al mark 1-pair as
RJ-11, 2-pair as RJ-14, 3-pair as RJ-25. Anyway, it's caused me a deal
of hair pulling with my Peet Bros weather station. Peet uses RJ-14 and
RJ-25 on the sensors (probably to avoid confusion ;-).

There is also a 4-pair in that shell. I have some on ancient (logical
connector?) cables but do not know the RJ number (if it is even
registered). Any idea what shell an RJ-61, RJ-ICX, or RJ-41 uses?
There are a number of 8-wire registered jacks. I think the main
difference between many types is the application. The FCC should have a
chart somewhere. I have a potentially incomplete one here.

RJ-45 might be a bit more available. ;-) The downside is that it
requires a more expensive crimper.

--
,David Norris
Dave's Web - http://www.webaugur.com/dave/
Dave's Weather - http://www.webaugur.com/dave/wx
ICQ Universal Internet Number - 412039
E-Mail - dave@webaugur.com

"I would never belong to a club that would have me as a member!"
- Groucho Marx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

118. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sat, 12 Aug 2000 00:24:17 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102246-2000.08.11-23.30.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I iwll take a small hit of that error; The package says "RJ11/14"
Sheesh ... so what's the big deal - anyone who has a T-238 knows what I
am talking about! You knew what I was talking about when I said all four
wires were connected through. What a classic Internet response ... the
bottom line is I found an expansion to what we now have to cover all the
receptacles you could need, it costs $9.95 from your local Rat Shack and
you need to do "nothing" but plug it in ... give it a break will ya!

Why we don't use RJ-25 with some break out to RJ11 is because Dallas
Semi settled on RJ-11/14 sized plug on the WS-1 and we put in the 6
conductor size receptacle that will take the RJ-11 or RJ-14 and more or
less settled on 3 conductors, two for the One-Wire (data and ground) and
one for +5vdc that "helps" the DS1820 family sensors (and probably some
others) make more reliably accurate readings. The more complex chips,
like the temperature sensors generate more errors in 'parasitic' mode.
My WS-1 generates almost no errors at all, but when it does it is
usually from DS1820 operating in parasitic mode. Will and Russ said
early on in the the DS18S20's are way more reliable when they get he
steady +5vdc

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of David Norris
> Sent: Friday, August 11, 2000 9:24 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: Multiple One-Wire Connections -
> inexpensive 5 port
> adapter
>
>
> "Brian B. Riley" wrote:
> > It was mentioned earlier that the double RJ-11 adapter is
> too tight of a
>
> Why not use RJ-25 with a multiline adapter? A multiline adapter will
> break a RJ-14 or RJ-25 out to two or three RJ-11s. That
> would give you
> 6 contacts instead of the 2 contacts on an RJ-11.
>
> The same sort of thing could be done with a RJ-45 going to a break-out
> box. That is how the Peet Bros Ultimeter connects most of
> the sensors.
> The breakout box also acts as a grounding block and power distribution
> point.
>
> > It is a about 1" wide by 4" long body with 5 RJ-11 receptacles...
> > All four contacts (red, green, yellow, black)...
>
> Someone is confusing connectors. RJ-11s don't have 4 wires.
> RJ-14 has
> four wires. 11, 14, and 25 have 2, 4, and 6 wires respectively in the
> same modular shell. Radio Shack, in particular, is very good about
> pointing out the distinction.
>
> --
> ,David Norris
>   Dave's Web - http://www.webaugur.com/dave/
>   Dave's Weather - http://www.webaugur.com/dave/wx
>   ICQ Universal Internet Number - 412039
>   E-Mail - dave@webaugur.com

>
> "I would never belong to a club that would have me as a member!"
>   - Groucho Marx
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

119. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: David Norris <dave@webaugur.com>
Date: Sat, 12 Aug 2000 00:46:32 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102268-2000.08.12-00.52.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:
> The package says "RJ11/14"
> Sheesh ... so what's the big deal

No big deal unless you're the one asking a Radio Shack employee for a
RJ-11 when you want what they call a RJ-14.

> anyone who has a T-238 knows what I
> am talking about!

I do not have a T238, as you surmise. As such, I will refrain from
making suggestions. I obviously have nothing to contribute.

> What a classic Internet response...

No, the classic response is to blow up on the assumption everyone is
against you.

> give it a break will ya!

No problem, last word you'll hear from me on the T238.

> Why we don't use RJ-25 with some break out to RJ11 is because Dallas
> Semi settled on RJ-11/14 sized plug on the WS-1 and we put in the 6

It is logical to use a RJ-14 for instruments. I think that overall it
is a bit limiting to use them on the controller.

> one for +5vdc that "helps" the DS1820 family sensors (and probably some
> others) make more reliably accurate readings. The more complex chips,

Yes, I am familiar with the Dallas 1-wire sensors.

> early on in the the DS18S20's are way more reliable when they get he
> steady +5vdc

That, they are.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

"I would never belong to a club that would have me as a member!"
                                          - Groucho Marx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

120. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sat, 12 Aug 2000 08:03:44 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102303-2000.08.12-08.10.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

David Norris wrote:
>

> Gerry Creager N5JXS wrote:
> > I just checked, and my RJ-11's are all 2-pair... RJ-45's are 4-pair,
> > RJ-25's are 3-pair. I've not met RJ-14's but I'll certianly look, now!
>
> By golly you're right, RJ-11s should normally be two pair. I keep
> finding RJ-11s that are only 1-pair. RadShack et al mark 1-pair as
> RJ-11, 2-pair as RJ-14, 3-pair as RJ-25.   Anyway, it's caused me a deal
> of hair pulling with my Peet Bros weather station. Peet uses RJ-14 and
> RJ-25 on the sensors (probably to avoid confusion ;-).

The nice thing about standards is that there's so many to choose from;-)

> There is also a 4-pair in that shell. I have some on ancient (logical
> connector?) cables but do not know the RJ number (if it is even
> registered). Any idea what shell an RJ-61, RJ-ICX, or RJ-41 uses?
> There are a number of 8-wire registered jacks. I think the main
> difference between many types is the application. The FCC should have a
> chart somewhere. I have a potentially incomplete one here.

Somewhere in my bookmarks on Netscape I have a link to a really good
site withwiring diagrams and connector descriptions. As soon as I can
find it I'll forward it here.

> RJ-45 might be a bit more available. ;-) The downside is that it
> requires a more expensive crimper.

RS has a cheap crimper for "modular phone commectors" that will actually
doa pretty good job on RJ-45's and they used to have a slightly more
expensive version (which I've not seen lately) that just did great. The
cheap one I see around here will accommodate 4-pr cable and the -11, -25
and -45 bodies. I'm never quite comfortable with it that it is going to
make as good a crimp as something heftier and more expensive, but so far
it's done real well. With the RJ-45's, the real key is compulsive
behavior when combing the individual wires to insert it, and then
keeping adequate pressure on the wires to keep 'em inserted completely.
The only real batch of problems I had was after getting a "deal" at a
hamfest on the connectors... they did not cut the insulation well, and I
had bad contact. They did little better when I presented 'em with bare
wire. Just a bad batch of connectors, I guess.

--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

121. [wxsig] DS Relative Humidity Sensor

From: "Clay Bartholow" <w0led@arrl.net>
Date: Sat, 12 Aug 2000 8:12:16
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102304-2000.08.12-08.18.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

reply re: Rich Beckwith Wn0x (humidity/bp sensors)

This is probably a little stale (since I just got my issue yesterday) but
the August 2000 Sensors magazine has the article on the 1-Wire humidity
sensor. You can read it at:

http://www.sensorsmag.com/articles/0800/62/index.htm

This is the shorter Dallas Semiconductor blurb:

http://www.ibutton.com/weather/humidity.html

Price is indicated as $25.

Clay
W0LED
w0led@arrl.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

122. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sat, 12 Aug 2000 08:12:53 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102305-2000.08.12-08.19.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:
>
> I iwll take a small hit of that error; The package says "RJ11/14"
> Sheesh ... so what's the big deal - anyone who has a T-238 knows what I
> am talking about! You knew what I was talking about when I said all four
> wires were connected through. What a classic Internet response ... the
> bottom line is I found an expansion to what we now have to cover all the
> receptacles you could need, it costs $9.95 from your local Rat Shack and
> you need to do "nothing" but plug it in ... give it a break will ya!

No, if you're going to use Radio Shack nomenclature, we're just going to
have to hold you responsible for all their typos, too!!!!!! ;-)

> Why we don't use RJ-25 with some break out to RJ11 is because Dallas
> Semi settled on RJ-11/14 sized plug on the WS-1 and we put in the 6
> conductor size receptacle that will take the RJ-11 or RJ-14 and more or
> less settled on 3 conductors, two for the One-Wire (data and ground) and
> one for +5vdc that "helps" the DS1820 family sensors (and probably some
> others) make more reliably accurate readings. The more complex chips,
> like the temperature sensors generate more errors in 'parasitic' mode.
> My WS-1 generates almost no errors at all, but when it does it is
> usually from DS1820 operating in parasitic mode. Will and Russ said
> early on in the the DS18S20's are way more reliable when they get he
> steady +5vdc

Makes sense to me. With luck I'll get my kit going in the next week...
I may take it to work Monday (I need to be there for problems, but hide
from an irate co-worker just coming back from vacation...) and see if
it's gonna fly for me!

73, gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

123. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: Ray Vaughan <ray@rayvaughan.com>
Date: Sat, 12 Aug 2000 14:48:02 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102338-2000.08.12-13.54.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:03 AM 8/12/00 -0500, you wrote:
>The only real batch of problems I had was after getting a "deal" at a
>hamfest on the connectors... they did not cut the insulation well, and I
>had bad contact. They did little better when I presented 'em with bare
>wire. Just a bad batch of connectors, I guess.

Maybe, maybe not.

There are two styles of connectors. One pricks the wire in the middle. This is used for stranded wire.
   The other straddles the wire with a V notch, that's used for solid wire.   If you used the wrong type
 of connector for your type of wire, that could explain the results you got.

You might see some connectors are UL listed.   I think this certifies that they have a certain gold
plating thickness. Some cheap connectors don't have enough gold and they'll be intermittent.

Here's one reference to USOC codes:

http://blackbox.com/techinfo/usoc.htm

Unfortunately, they don't mention RJ-14, which I understand to be a 2 line (2-pair) RJ-11.

Ray J. Vaughan, MS, CBTE, CERT
KD4BBM PG-7-15266
http://www.rayvaughan.com/
ray@rayvaughan.com
ray@2-way.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

124. [wxsig] RE: Temp Shield

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sat, 12 Aug 2000 21:56:50 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102381-2000.08.12-23.02.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Brian B. Riley <brianbr@wulfden.org>

... BIG QUESTION ... Neither the pictures
> from the SIG nor the ones on the web site show up-close the detail of
> the actual sensor mount. The DS18S20 is a tiny package with 3 wires, I
> have the +5 on my O-W bus to power it for better conversions, that is no
> problem, but:
>
>   (1) what is used as a "receptacle" for the chip?

I use a Molex 3 pin connector with the sensor and its 3 wires in one half
and have a clamp to hold the other half. This way, you can change sensors
very easily since they just plug in.

>   (2) How to protect the exposed wire surfaces?
>   - Trim them down before inserting?
>   - Goop it with slight covering of silicone?
>   - Hot glue it (will the heat be too much for the chip)?
>   - Leave it exposed

 I coat the three wires with RTV. Also, I fill the exposed part of the
Molex connector with RTV to prevent moisture from reaching the inside of the
connector.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

125. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sun, 13 Aug 2000 00:36:31 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102419-2000.08.13-00.43.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ray Vaughan wrote:
>
> At 08:03 AM 8/12/00 -0500, you wrote:
> >The only real batch of problems I had was after getting a "deal" at a
> >hamfest on the connectors... they did not cut the insulation well, and I
> >had bad contact. They did little better when I presented 'em with bare
> >wire. Just a bad batch of connectors, I guess.
>
> Maybe, maybe not.
>
> There are two styles of connectors. One pricks the wire in the middle. This is used for stranded
wire.   The other straddles the wire with a V notch, that's used for solid wire.   If you used the wrong
 type of connector for your type of wire, that could explain the results you got.

Thought about that and tried it on solid and stranded. Equally poor in
all regards. The house has been rewired in Cat-5; the stations are
point-to-point solid on the appropriate puchdown blocks. The jumpers
between the wall and the devices are stranded.

Nice thought, just that I really got bit and had to redo a bit of the
house a couple of years ago.

> You might see some connectors are UL listed. I think this certifies that they have a certain gold
plating thickness. Some cheap connectors don't have enough gold and they'll be intermittent.

Interesting. I'll think on that.

> Here's one reference to USOC codes:
>
> http://blackbox.com/techinfo/usoc.htm
>
> Unfortunately, they don't mention RJ-14, which I understand to be a 2 line (2-pair) RJ-11.

I'll look there!

73, gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

126. [wxsig] RE: Temp Shield

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sun, 13 Aug 2000 09:32:51 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102440-2000.08.13-09.39.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ Chadwick wrote:
>
> ----- Original Message -----
> From: Brian B. Riley <brianbr@wulfden.org>
>
> >   (2) How to protect the exposed wire surfaces?
> >   - Trim them down before inserting?
> >   - Goop it with slight covering of silicone?
> >   - Hot glue it (will the heat be too much for the chip)?
> >   - Leave it exposed
>
> I coat the three wires with RTV. Also, I fill the exposed part of the
> Molex connector with RTV to prevent moisture from reaching the inside of the
> connector.

One caveat, from someone who has had problems with RTV: As RTV silicone
cures, it generates acetic acid. That's characterized as a "strong"
acid, and will tend to corrode most metals. That's corrode to the point
of eating them in two. Dow Corning makes a couple of sealants that are
better than the hardware store variety. Check out
http://www.neelyindustries.com/prod01.htm and look specifically for 738,
748 and 3140. 3145 also works pretty well and I've not had problems
with it corroding anything.

For those familiar with it, for my Cows In Space project, all the PCBs
and connections were painted with 3140. We had zero failures caused by
shorting of something against an internal connection or PCB. NASA
requires all PCBs be potted with 3140, and all connectors filled with
3145 for manned spaceflight applications. Or did when I was at NASA/JSC
working on SAREX and Space Station.

73, gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

127. [wxsig] RE: Temp Shield

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sun, 13 Aug 2000 15:26:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102478-2000.08.13-16.32.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>

> Russ Chadwick wrote:
> >
> > I coat the three wires with RTV. Also, I fill the exposed part of the
> > Molex connector with RTV to prevent moisture from reaching the inside of
the
> > connector.
>
> One caveat, from someone who has had problems with RTV: As RTV silicone
> cures, it generates acetic acid. That's characterized as a "strong"
> acid, and will tend to corrode most metals. That's corrode to the point
> of eating them in two. Dow Corning makes a couple of sealants that are
> better than the hardware store variety. Check out
> http://www.neelyindustries.com/prod01.htm and look specifically for 738,
> 748 and 3140. 3145 also works pretty well and I've not had problems
> with it corroding anything.
>
> For those familiar with it, for my Cows In Space project, all the PCBs
> and connections were painted with 3140. We had zero failures caused by
> shorting of something against an internal connection or PCB. NASA
> requires all PCBs be potted with 3140, and all connectors filled with
> 3145 for manned spaceflight applications. Or did when I was at NASA/JSC
> working on SAREX and Space Station.
>

I checked, and the stuff I use is Dow Corning 3140. I thought that stuff
was just called RTV, but Gerry's message has some good points, that I was
unaware of. I like the 3140 because it is thin and flows for awhile until
it cures. Makes it easy to get it to go where you want it.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

128. [wxsig] Re: Multiple One-Wire Connections - inexpensive 5 port adapter

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sun, 13 Aug 2000 20:12:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102498-2000.08.13-19.18.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

When I bought my RJ-45 Crimpers for doing Cat-5 stuff I found it
interesting that the crimpers themselves as well as the connector
packages specifically were labelled as being "for solid wire" or "for
stranded wire."

> -----Original Message-----
> From: Gerry Creager N5JXS
> Sent: Sunday, August 13, 2000 1:37 AM
>
> Ray Vaughan wrote:
>>
>> At 08:03 AM 8/12/00 -0500, you wrote:
>>>The only real batch of problems I had was after getting a
>>> "deal" at a hamfest on the connectors... they did not cut the
>>> insulation well, and I had bad contact. They did little better
>>> when I presented 'em with bare wire. Just a bad batch of
>>> connectors, I guess.
>>
>> Maybe, maybe not.
>>
>> There are two styles of connectors. One pricks the wire in
>> the middle. This is used for stranded wire. The other
>> straddles the wire with a V notch, that's used for solid
>> wire. If you used the wrong type of connector for your type
>> of wire, that could explain the results you got.

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

129. [wxsig] T238, Rev 2

From: William Beals <will@beals5.com>
Date: Sun, 13 Aug 2000 22:52:33 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102520-2000.08.13-23.59.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I was out on vacation for a long weekend, so hadn't checked email since Wednesday night last week. It'll take me a while to catch up. Clearly be big topic while I was gone was a son-of-T238. This actually has been a topic of discusion between some of the originaly T238 developers, but we wanted to hold off until we had some known alternate sources of weather stations. For it to make financial sense as a TAPR kit we felt a decent supply of sensors (either commercial or home-made) would be needed. One way or 'tuther that is going to happen, so some of us had been speculating on what this follow-on board would be. Since it was mostly just idle chatter and still a bit premature (no sensors yet), we opted not discuss it on the wxsig yet.

I'm clearly taking a conservative route and not wanting to start another project until I get the code for this one more mature in terms of a sensor farm. I am doing about as much as I can to in terms of support fo this project now given job(s) and family, so if other folk want to chime in and help, that is great. The reference schematics and source code is out there in the public domain, meaning I am not at all anal retentive on control over this project (wish others did the same).

For now I am obliged to continue supporting the TAPR kit as it would be unfair to TAPR and all the kit builders to abandon them just as the kit gets released. I do expect to get the feature list and sensor list fairly stable over the next few months then I would very much like to turn attention to a follow-on board while maintaining a common codebase with the the current T238 board so new features would be available to both projects. I'm not opposed to anyone starting off a tangent project at all, with or without my help. It pains me to say this as a hardware guy, but the hardware is the easy part, the firmware is the challenge for this project.

At least from a high level, we had been tinkering with similar ideas on the "T238-lite". The debug interface doesn't seem to be as popular as I had hoped, and if anyone did want to develop code, the "T238-heavy" would be fine (are there any hopeful code developers out there?). If you toss code development needs, then clearly smaller is better and it would be nice to have the board smaller than the LCD module.

I have been arguing with one of those double-adapters for a while and have been lookin for one on an extension cord, that will help a lot. With hindsight, that is clearly an "oops" on the current board.

Many of you have good comments on both new and current stuff, I'll get caught up in a few days.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

130. [wxsig] Re: Missing Hurricane Plots Maybe

From: "Wayne Hester" <ke7ku@arrl.net>
Date: Mon, 14 Aug 2000 4:31:46
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102542-2000.08.14-04.38.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dale,
We are having the same problem here in Yuma. The wx warnings etc are coming
in fine, but the objects are not making it from the local igate. I am
seeing wx objects when I connect directly to the Internet. So far I have
not seen any hurricanes of recent. I believe they are getting lost in the
shuffle with the local igate running A-Filter and showing up as errors. I
am running WinAPRS ver 247.
Lots of possible places for errors to occur.

Wayne KE7KU

On 08/04/00, ""Dale Huguley" <kg5qd@earthlink.net>" wrote:
> Hi All-
>   I am pulling hair out (and I don't have much left) looking for a problem
> with display of the predicted hurricane positions from my parser. I first
> thought it was a problem with the aprsd server- but they are being sent from
> it fine. The "present position" always plots. If I have my local loop-back
> port open- the predicted positions plot. If I am on the aprs internet feed
> only (either one) they don't plot. This appears to be a problem with
> winaprs (I am running 2.4.7) What possible difference the internet vs. the
> direct packet would make is beyond me.
>
>   At any rate if some of you folks could see if you are having the same
> problem. Tropical Depression Three has formed in the far eastern Atlantic
> and there will be updates at 0300z 0900z 1500z 2100z (up to 30 minutes
> before the scheduled times generally). I will need to know what software
> you are running- if you received the data by rf or internet- and if by
> internet which feed.
>
> Please e-mail me direct at kg5qd@earthlink.net
>
> 73 de a very confused kg5qd Dale

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

131. [wxsig] Re: T238, Rev 2

From: wb4mdc@arrl.net
Date: Mon, 14 Aug 2000 08:38:10 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: warren@rainier.eng.utr.ti.com
Message-ID: <LYR15067-102555-2000.08.14-07.44.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Howdy group.

With all the comments about using "RJ<nn>" connectors, what happens if someone
plugs a live telephone line into the T238? And what if it rings???!!

Can the interface withstand this kind of abuse? If it's not a concern then no
attention needs be paid to the T238-lite version.

Just wondering since my background is hardware and get paid for writing
software...

Jack Warren
WB4MDC
FN42fv (Southern 'Frozen North')

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

132. [wxsig] DS1994 Mounting - DS9094F is the answer

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 14 Aug 2000 10:09:20 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102570-2000.08.14-09.15.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

FedEx jus arrived and deposited my DS-9094Fs in my hand, I just fiddled with it a bit and it is definitely the answer for the DS1994 on board the T-238. It is, stripped down to basics, no more than one of those plastic containers that hold the coin sized batteries in PC motherbaords, with a bottom side contact and a top hold down/contact. This specific version (9094F) has two standard contacts that will push through holes in the PC board and be soldered down.

It's some Korean made piece of plastic and metal adapted/manufactured to iButton dimensions. The iButton goes in bottom side down and the slight curvature of the top contact goes over and comes down onto the isolated top contact. Its stays well clear of the can side and bottom .... the retention is solid; I would think it would hold up to modest physical activity, I am not sure I would want a motorcycle mounted device using this holder, but for our purposes it seems way more than adequate.

They are $1.77 in small quantities. I easily have room for two on the T-238 proto area and still room for other expansion.

73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

133. [wxsig] Re: T238, Rev 2

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 14 Aug 2000 10:19:36 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102573-2000.08.14-09.25.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If they do ... they deserve whatever happens!

Do the math, 48-90 volts on an "on-hook" phone line, the T-238 will definitely provide an "off-hook" condition probably enough to fry the CPU ... I suppose a small fuse in series with an MOV or a 12 Volt zener might protect from that stupidity ... the only reason I can see that this might be a problem is if we went to putting onboard modem capability so someone could dial in to see the weather data ... but that would involve a whole new design ...

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of wb4mdc@arrl.net
> Sent: Monday, August 14, 2000 8:38 AM
> To: TAPR WX Special Interest Group
> Cc: warren@rainier.eng.utr.ti.com
> Subject: [wxsig] Re: T238, Rev 2
>
>
> Howdy group.
>
> With all the comments about using "RJ<nn>" connectors, what
> happens if someone
> plugs a live telephone line into the T238? And what if it rings???!!
>
> Can the interface withstand this kind of abuse? If it's not
> a concern then no
> attention needs be paid to the T238-lite version.
>
> Just wondering since my background is hardware and get paid
> for writing
> software...
>

>
> Jack Warren
> WB4MDC
> FN42fv (Southern 'Frozen North')
>
>
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

134. [wxsig] Re: DS1994 Mounting - DS9094F is the answer

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 14 Aug 2000 09:30:18 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102579-2000.08.14-09.34.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian, did you get the holder from TAPR, or from DalSemi?

> FedEx jus arrived and deposited my DS-9094Fs in my hand, I just fiddled
>with it a bit and it is definitely the answer for the DS1994 on board
>the T-238. It is, stripped down to basics, no more than one of those
...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

135. [wxsig] Re: DS1994 Mounting - DS9094F is the answer

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 14 Aug 2000 10:47:21 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102585-2000.08.14-09.53.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

No TAPR isn't carrying any of the DalSemi stuff ... I ordered from
DalSemi through the web ... I rodered the 1994s and the 9094s on 8/7,
they delivered the 1994s on the 10th and the 9094s arrived today.

 DalSemi has been, at least for me over the last year, a real pleasure
to deal with! I sit here up on my mountain and order through the web
and the Fedex man shows up a few days later even in the dead of winter
with the snow and the wind howling. They ship the order as quickly as
possible and if they have split the order they never charge for the
second shipping.

73 de brian
--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: Rich Beckwith
> Sent: Monday, August 14, 2000 10:30 AM
>
> Brian, did you get the holder from TAPR, or from DalSemi?
[Attachment: Brian B. Riley (N1BQ).vcf; text/x-vcard; 538 bytes]

136. [wxsig] Re: DS1994 Mounting - DS9094F is the answer

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 14 Aug 2000 09:53:04 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102587-2000.08.14-09.56.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'll look harder, I only found the "off the shelf" stuff on their order web
site. Maybee I am at the wrong URL.

-----Original Message-----
From: Brian B. Riley <brianbr@wulfden.org>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Monday, August 14, 2000 9:47 AM
Subject: [wxsig] Re: DS1994 Mounting - DS9094F is the answer

>No TAPR isn't carrying any of the DalSemi stuff ... I ordered from
>DalSemi through the web ... I rodered the 1994s and the 9094s on 8/7,
>they delivered the 1994s on the 10th and the 9094s arrived today.
>
> DalSemi has been, at least for me over the last year, a real pleasure
>to deal with! I sit here up on my mountain and order through the web
>and the Fedex man shows up a few days later even in the dead of winter
>with the snow and the wind howling. They ship the order as quickly as
>possible and if they have split the order they never charge for the
>second shipping.
>
>73 de brian
>--
>N1BQ-3 @ 44 31.73N 072 51.55W
>WideN-N digi and weather station in Underhill Center, VT
><n1bq@amsat.org>
>
>> -----Original Message-----
>> From: Rich Beckwith
>> Sent: Monday, August 14, 2000 10:30 AM
>>
>> Brian, did you get the holder from TAPR, or from DalSemi?
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

137. [wxsig] Re: DS Relative Humidity Sensor

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 14 Aug 2000 10:07:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102593-2000.08.14-10.10.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Clay,

Yep, It looks like Dallas will be able to make a Humidity sensor much
cheaper than I can. I guess I am looking towards the day when we will have
to be self sufficient and make our own Wx instrumentation. I am still
working on a replacement for the 1-wire Wx station, as are many others.
Many hours so far picking through PVC (joints/pipe/fittings) at the local
hardware store trying to get ideas, photographing and diagramming the
existing station and its internals etc.

Bottom line: I don't think any of us should rely on DalSemi to produce Wx
instrumentation in the long term.   They are in the business of selling chip
technology and I think their 1-Wire Wx station has accomplished what they
intended, generate interest in and promote 1-wire technology. I may be all
wet with my BP/Humidity experimentation if DalSemi goes a different
direction. But it has been fun, and with any luck some of what I am working
on will be of value to the group later on.

In terms of the T238 as a 1-wire development platform, we need to extend the
range of the devices it will support. I have ideas for Wind/Solar
measurement which will require A/D conversion. I am particularly interested
in the DS2438 (Battery Monitor) and DS2450 (Quad A/D Converter) for remote
voltage measurement. The DS2438 ($4) is half the price of the DS2450, and
includes a built in Temperature sensor and storage (great for a weather
pagoda!) I understand that DalSemi will be coming out with A/D chips with
even better voltage resolution down the line.

I wish I had a better handle on low level programming so I could offer some
assistance to Will as he works to enhance the 1-wire software. I hate to
admit it but I'm a 5GL programmer, and much better at taking existing
procedures and high level functions to solve business logic than the hard
core low level stuff. My hats off to the folks like will who can!

Regards,

Rich Beckwith Wn0x

>reply re: Rich Beckwith Wn0x (humidity/bp sensors)
>
>This is probably a little stale (since I just got my issue yesterday) but
>the August 2000 Sensors magazine has the article on the 1-Wire humidity
>sensor. You can read it at:
>
>http://www.sensorsmag.com/articles/0800/62/index.htm
>
>This is the shorter Dallas Semiconductor blurb:
>
>http://www.ibutton.com/weather/humidity.html
>
>Price is indicated as $25.
>
>Clay
>W0LED
>w0led@arrl.net
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

138. [wxsig] modification the rain gauge

From: smbren@iname.com
Date: Mon, 14 Aug 2000 14:57:51 -0400 (EDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102638-2000.08.14-14.03.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello everyone, we are Manny, Margarita, and Miguel. We are from Big Bend High School located in Terlingua, Tx. Our teacher is Mr. Steve Brennecke(KB5SJU). There were a few problems with the rain gauge, but luckily Mr.Brennecke was able to fix the problem, and we wanted to give you a few tips on how to modify the rain gauge. What we did was put two pieces of steel washers on opposite sides of the magnet. Also we moved the pcb closer to the magnet.

Get free personalized email at http://email.lycos.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

139. [wxsig] Re: modification the rain gauge

From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 14 Aug 2000 13:14:13 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102641-2000.08.14-14.20.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
Subject: [wxsig] modification the rain gauge

> Hello everyone, we are Manny, Margarita, and Miguel. We are from Big Bend
High School located in Terlingua, Tx. Our teacher is Mr. Steve
Brennecke(KB5SJU). There were a few problems with the rain gauge, but
luckily Mr.Brennecke was able to fix the problem, and we wanted to give you
a few tips on how to modify the rain gauge. What we did was put two pieces
of steel washers on opposite sides of the magnet. Also we moved the pcb
closer to the magnet.
>
> ---

Hi Manny, Margarita, and Miguel,

Very interesting. Before you did this modification, was the rain gauge
counting too much or not enough? Also, how thick are the washers (like a
nickel, dime or thick paper)? Also, are the washers bigger than, same size
as, or smaller than the magnet? I'm assuming that you used two complete

steel washers, not "two pieces of steel washers", is that right?

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

140. [wxsig] Lotsa little things

From: William Beals <will@beals5.com>
Date: Mon, 14 Aug 2000 22:17:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102749-2000.08.14-23.20.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Forgive if putting a whole bunch of issues into one email doesn't work too good, it just saves sending a zillion little emails. All these emails should get me current with everything up until Monday evening. If I didn't address something you wanted me to, please remind me.

Kyle: Cool on the licence! So far I havn't heard too much about RF issues, but anecdotal data does not make for stable products! I'm in the CE business where we have to extrapolate test runs of a hundred units to predict failure rates on hundreds of thousands of units. Scary stuff. Any concrete data is useful, especially for any future boards that come to life. Do you plan on testing bare boards or boards in boxes?

Brian: On Son-of-T238 (or T238-lite, or whatever), here are some comments for discussion. Designing by committee can can be tough. Are you thinking of a parallel project on your own or something in cooperation with TAPR? This clearly makes a big difference in how to approach things. General comments from all are appreciated.
1) No question that smaller is better.
2) Drop the debug stuff (xtal, debug DE-9 connector)
3) Drop the TNC DE-9 connector.
4) We had lots of discussion on how to do off-board switches, no real easy ways came up, open for suggestions.
5) I need to look up the button recepticals you refer to, usually on-board mounts are mutually exclusive with chassis-based designs.
6) Second RJ-11 depends on how many folk would need it. Outside the blue-dot receptical (challended above), are there any other uses?
7) Multiple LCDs make a big mess of the user-interface and really mess up code flow. Display-less would be highly preferable over multiple LCD formats.
8) Power/Reset probably isn't required on a debugger-less environment. The need should be rare enough that we can suggest pulling the power connector.
9) I have started peeking at the MX614 interface and it looks encouraging, the part appears to have a lot of its own synchronizing circuitry, making life for the 6808 much easier. The MX614 does not have a UART interface though, so sharing the Tx and Rx lines won't work (this by the way is how they solve some of the real-time requirements.
10) APRS does allow for user-specific data to be thrown in the comment area of the string, so non-standard enhancements are possible without violating APRS specs. BTW: small size without resorting to surface-mount gets tough...

Brian: On additional sensor support. I still have a reasonable amount of bandwidth. I have 50 timer ticks every 5 seconds (100ms tick). Right now I am using up about 16 of them for the current batch of sensors and data reporting routines (the latter is also done inside the interrupt routines).

Brian: My biggest concern with the thermochrons is limited battery life. If set wrong (pretty easy to do), you can wipe out the batter in less than three months. I think they are great devices and have a stable of them, but for this project, the chance for messing things up seems a bit high.

Bill: Hopefully the new firmware download will get you your position string. An alternate way to get the backlight to go off on backup power would be to get backlight power only from the wall source instead of the backed-up source. Since the backlight power has seperate power pins, this would not be difficult even with the current design and no software impact. Whadayathink?

Brian: The error counters roll at 64 in all cases.

Rich: Cool on the source for the humidity sensors. I am stuck using
assembly for now, but reference code in any language is always handy. I
assume you have no probems with the end result being in the public domain.

Brian: The adapter you show is along the lines of what I was thinking of.
 I though there were smaller ones though. Maybe not. If the number of
folk that need it are small, then it would be a shame to burden everyone
with the multiple connectors and this would be a nice compromise.

Brian: When I made up my external temperature sensor, I just put hot glue
all over the wires to protect them from the elements and from eachother.
 Hot glue is a lot cooler than soldering, so you should be OK.

All: Note that the T238 should only need the two center conductors for the
1-Wire stuff. We hooked up the other four wires just in case, following
some other Dallas boards. The only real thing that would require extra
wires would be needing hardwired power (something I suspect will be
likely).

Clay: Cool on the humidity sensor being official. Time to get to work on
a new sensor!

All: John Vause found a bug in my Peet emulation mode. Every five minutes
(60th sample) I seem to append APRS data on the end of the Peet string!
 Added to the bug list...

Jake: Good point on not being protected from real telephone voltages. One
thing I can only hope for is that since this is a kit we are dealing with
reasonaby smart folk. If this ever went into a ready-built box for the
masses, this would be a big concern.

Brian: For some reason I can't access the DS9094F datasheet tonight, I'll
try later.

Rich: What is 5GL??? The last time I heard about GLs, they had only gotten
to 4 and I didn't understand that one either!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

141. [wxsig] The Return Of TROPIC

From: "Dale Huguley" <kg5qd@earthlink.net>
Date: Tue, 15 Aug 2000 11:12:41 -0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102795-2000.08.15-06.23.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all-
    A persistant and unresolved problem between my wx parser and the main
internet servers in Miami and Southern California forces me to go back to
"TROPIC" as the from call for hurricane output. The future positions will
not plot using anything with NHC in the "from" call. I gate operators will
need to remove the "NHCHEF" like calls in their stations.txt file , and add
"TROPIC" to I-gate hurricane info.
    On another topic (maybe) the "Yuma Gang" has discovered that a valid
location must be received from a station in order to I-gate objects from
that station. The purpose of this "feature" is unknown, but it explains why
wx objects are not being I-gated. This may be related to the hurricane
problem above. At any rate- the entire parsing system will have to be
reworked or the I-gate software changed (fixed?).

73 de kg5qd Dale

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

142. [wxsig] Subject: Re: DS Relative Humidity Sensor

From: "Clay Bartholow" <w0led@arrl.net>
Date: Tue, 15 Aug 2000 8:7:52
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102808-2000.08.15-08.14.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich,

I hear you...I have been working on/using a bp sensor as a standalone
device (based on a Lucas Novasensor bp sensor) for awhile now. It's a bit
frustrating to crank out the design and then see a commercial outfit beat
you on price, size, etc. But the experience is worth it (I usually think
so anyway!)

I'm waiting for FedEx to deliver a couple of Motorola compensated
sensors...I was thinking I might do a redesign of my existing bp setup and
use the Motorola sensor to drive DalSemi's Smart Battery Monitor in order
to do the ADC and 1-Wire interface.

I'm teaching three classes and preparing a new one so by the time I get a
round tuit, who knows?

Any thoughts/comments?

Clay W0LED

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

143. [wxsig] Subject: Re: DS Relative Humidity Sensor

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 15 Aug 2000 08:20:13 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102812-2000.08.15-08.24.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Clay,

Sounds like we are on the same sheet of music. Using a Motorola MPX4115A and DS2438 (Smart Battery
Monitor) myself with good results. Your are welcome to the schematics etc. I have compiled. Where did
you buy the sensors? I found them for $22, but shipping and handling from Newark Electronics was
pretty high.

>>> w0led@arrl.net 08/15/00 08:07AM >>>
Rich,

I hear you...I have been working on/using a bp sensor as a standalone
device (based on a Lucas Novasensor bp sensor) for awhile now. It's a bit
frustrating to crank out the design and then see a commercial outfit beat
you on price, size, etc. But the experience is worth it (I usually think
so anyway!)

I'm waiting for FedEx to deliver a couple of Motorola compensated
sensors...I was thinking I might do a redesign of my existing bp setup and
use the Motorola sensor to drive DalSemi's Smart Battery Monitor in order
to do the ADC and 1-Wire interface.

I'm teaching three classes and preparing a new one so by the time I get a
round tuit, who knows?

Any thoughts/comments?

Clay W0LED

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

144. [wxsig] Re: Modification of rain gauge

From: smbren@iname.com
Date: Tue, 15 Aug 2000 09:19:16 -0400 (EDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102813-2000.08.15-08.25.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Hi Russ, before we modified the rain gauge it was not counting at all. The washers are 1mm thick, 1cm in diameter, and the hole in the washer is .5cm in diameter.The washer weighed .4 grams. To modify the gauge we used two complete washers. Another thing we did was move the pcb two millimeters closer to the magnet.We will send a photograph of the modified gauge to you and anyone who needs one.
>
> Miguel, Margarita, and Manny

Get free personalized email at http://email.lycos.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

145. [wxsig] Re: Subject: Re: DS Relative Humidity Sensor

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Tue, 15 Aug 2000 08:22:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102814-2000.08.15-08.28.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich Beckwith wrote:
>
> Clay,
>
> Sounds like we are on the same sheet of music. Using a Motorola MPX4115A and DS2438 (Smart Battery Monitor) myself with good results. Your are welcome to the schematics etc. I have compiled. Where did you buy the sensors? I found them for $22, but shipping and handling from Newark Electronics was pretty high.

Could the schematics be circulated widely?

Thanks, Gerry
--
Gerry Creager gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

146. [wxsig] EMC test of WS-1 + T238

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Tue, 15 Aug 2000 10:16:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102834-2000.08.15-10.24.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks Will, et al,
I still don't have my call sign yet. . .

We discussed this and have decided to perform no ESD testing for fear of destroying the unit (uh, is this covered by a warranty?). Wide range RF emissions, susceptibility and 50/60hz magnetic fields will be performed. We have a 3m Compact Ferrite Chamber to simulate RF at 160m to 33cm. Our test levels cannot exceed 25W PEP due to limitations in our equipment.

I want to test the unit without an enclosure and with long leads attached to the rain and combo sensors. This would seem to be the worst possible case. Some of the listees have talked about using plastic enclosures, so no shielding will be in place. I only expect to obtain qualitative data. Some of you are probably thinking (as I) that 25 watts 'taint doodley squat for test power. . .oh well, it's a start. At least the field uniformity is good and flat across the spectrum. I want to model the test for the intended use in the ham bands and I can imagine how some of you will rig the Wx in your

shacks/homes/parent's bedrooms. :-)

I Understand your CE black magic. Statistical quality systems are cool.
Just as EMC work is, I suppose. Its all black magic. Someone brought up a
good point about the RJ(nn) connector being plugged into the POTS. It is a
sure thing that the T238 would be destroyed. Tsk, Tsk, no CE mark for this
product (nor UL, TUV, or DofC) but don't feel bad, everyone is getting their
money's worth on this. If the system cost $500 I would expect it to bear
all the right marks and be idiot proof.

Cheers,

Kyle kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>

Kyle: Cool on the license! So far I haven't heard too much about
RF
issues, but anecdotal data does not make for stable products! I'm
in the
CE business where we have to extrapolate test runs of a hundred
units to
predict failure rates on hundreds of thousands of units. Scary
stuff. Any
concrete data is useful, especially for any future boards that come
to
life. Do you plan on testing bare boards or boards in boxes?

147. [wxsig] RE: EMC test of WS-1 + T238

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 15 Aug 2000 12:44:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-102852-2000.08.15-11.51.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

EMC test of WS-1 + T238this and have decided to perform no ESD testing for
fear of destroying the unit (uh, is this covered by a warranty?). Wide
range RF emissions, susceptibility and 50/60hz magnetic fields will be
performed. We have a 3m Compact Ferrite Chamber to simulate RF at 160m to
33cm. Our test levels cannot exceed 25W PEP due to limitations in our
equipment.

Kyle,

The only parts that would be prone to failure would be the micro, the
MAX232, and crystals. If you like, I could lend you my beta T-238 for
testing, the production board is not much different. Or, if you like, test
yours. If a part fails I'll replace it.

I'd like to know how the T-238 fares in the ESD environment. The ferrite
beads was a suggested design enhancement from another project I am working
on. Plus for all the leads coming into the project, there is an RC filter.
Maybe you could test the new project when it's ready (for those interested
in knowing what this new project is, attend the DCC in September :-).

 - Steve, N7HPR
   n7hpr@tapr.org

148. [wxsig] LCD Availibility

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Wed, 16 Aug 2000 10:07:56 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103039-2000.08.16-10.14.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Good News, I got my hard wired T238 working at first power-up. (I think)
As I am using a 1 x 20 display instead of a 4 x 20 display and the
messages are broken up due to this but it seems to be working.

Bad News, As of Aug. 16 The 4 x 20 LCD Seiko L234B1J000 Mouser stock #
628-L2034B1J are not in stock. I was told there was a world-wide
shortage of driver chips and Mouser will not take any more orders.

I found an equivalent display from AND. The AND 721GST Newark P/N 914661
However Newark is out of stock and has a delivery date to them of Sept.
25. (I would guess this may slip) So it seems the displays are very hard
to find. "son of T238" or "T-238 lite" may have to use a different

display platform.... Anyone know where to purchase one of these
displays?
Delbert N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

149. [wxsig] Re: Subject: Re: DS Relative Humidity Sensor

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 16 Aug 2000 16:56:29 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: <n0ss@earthlink.net>
Message-ID: <LYR15067-103125-2000.08.16-17.00.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All,

Dan Awtrey of DalSemi gave me the ok to pass along the BP and Humidity sensor schematics which can be downloaded at

http://home.earthlink.net/~wn0x/Bappwr38-2.doc and http://home.earthlink.net/~wn0x/Humid38.doc for the BP and Humidity sensors respectively.

My version of the board is also available at http://home.earthlink.net/~wn0x/BP2438.pdf as well. Page 1 is copy of Dan's stuff, and is followed by my version of the circuit and PC board layouts. We can thank Tom Hammond N0SS for a great job on the layouts. Notice the board layout supports both DIP and Unibody versions of the MPX4115 and surface mount and T092 versions

Please note that the BP sensor requires a parasitic power supply if you intend on running it entirely from the 1-wire bus. This is because the Motorola MPX4115A draws more current than the 1-wire bus can normally supply. I have implemented the design with a separate 5V supply because it isn't critical for me to have the BP sensor outside, and I intend to use the 5 volt supply on the T238. PLEASE NOTE that DalSemi's schematic uses the dual-inline package (DIP) for the MPX4115A and I am using the unibody version (6 pins in-line). The unibody version uses pin 1-Vout, 2-Ground and 3-Vsupply. Also, I jumpered pin 3 (VS-Minus) of the DS2438 to ground on the drawing as this was the only way I could get the circuit to work. The original drawing had pin 3 floating. Note that the unused pins on the MPX4115A are NC (Not Connected) so do not ground them.

Russ may be able to elaborate on the BP inside/outside issue in terms of accuracy. One of the MPX4115s I have has an orifice you can attach a tube to, which you can run outside . What do you think Russ? Does it matter much for BP?

As far as humidity is concerned, I planned on using the published sensor schematic from DalSemi. The HIH-3605-A is available from Newark Electronics for about $33. If you want REALLY accurate readings you can get the HIH-3605-A-CP which documents the purchased sensors actual response curve for about $5 more. This sensor has +/- 2% accuracy which is slightly better than the projected iButton device (DS-ADI-401) at +/- 4%. I would like to design the board with a DS18S20S temperature sensor and put the entire package in my temperature/humidity pagoda as a single unit.

Data sheets for the Motorola MPX4115A can be found at http://mot-sps.com/cgi-bin/get.pl?/books/dl200/pdf/mpx4115arev*.pdf and for the Honeywell HIH-3605-A humidity sensor at http://www.newark.com/modules/116/15546.html

Rich - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

150. [wxsig] 1-Wire Weather Station Kits

From: "Victor Tuff" <vtuff59795@aol.com>
Date: Wed, 16 Aug 2000 16:59:46
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103127-2000.08.16-17.05.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Everyone,
I guess I'm late on board, because I missed the Dallas weather station kits before they were discontinued. Does anyone have one (preferably un-assembled) surplus to their requirements for sale?

Regards,

Vic
G7PYR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

151. [wxsig] LCDs and Sensors

From: William Beals <will@beals5.com>
Date: Wed, 16 Aug 2000 22:10:11 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103181-2000.08.16-23.14.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

LCDs certainly are a pain to get hold of cheaply. We went through a lot of pain before nabbing 100 of the current display for the kit. Many false starts and parts no longer available. As you can tell from earlier pictures we started off with a 2x20 but migrated to a 4x20 for the final product. It is a crap shoot.

Rich: It looks like I may be in a bit of a quandy. I am going to get some free time starting shortly and would like to finish the DS1994 data logging before messing with the humidity sensor. If the sensor comes out before I finish the 1994 stuff, I'm going to have a priority problem.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

152. [wxsig] Re: Subject: Re: DS Relative Humidity Sensor

From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 16 Aug 2000 22:13:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103182-2000.08.16-23.19.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <Rich@dps.state.mo.us>

Russ may be able to elaborate on the BP inside/outside issue in terms of accuracy. One of the MPX4115s I have has an orifice you can attach a tube to, which you can run outside .   What do you think Russ? Does it matter much for BP?

I think that for the types of pressure sensors that we are using in home-based applications, it is entirely adequate to have the sensor inside a normal building sensing the in-situ pressure. When I deploy my pressure sensor, it will be located in my garage and I expect no loss of accuracy due to being inside. Our surface stations at work use a tube to an outside pressure port, but that is because the sensor element is located inside a waterproof box that has a rubber gasket around the door.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

153. [wxsig] Re: LCDs and Sensors

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 16 Aug 2000 23:26:10 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103185-2000.08.16-23.30.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

No problems here Will. I hope the group finds my posts on BP and Humidity sensors of interest and value. With any luck, the WXSIG participants can help the T238 team with the testing and design of additional 1-wire instruments.

Regards,

Rich Beckwith Wn0x

>
>Rich: It looks like I may be in a bit of a quandy. I am going to get some
>free time starting shortly and would like to finish the DS1994 data logging
>before messing with the humidity sensor. If the sensor comes out before I
>finish the 1994 stuff, I'm going to have a priority problem.
>
>will
>
>---
>This message sent using 100% recycled Electrons
>(Minimum 30% post-consumer content)
>---
>Will Beals
>will@beals5.com
>15014 East Idaho Place
>Aurora, CO 80012-4740
>303-755-0293
>
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

154. [wxsig] RE: LCD Availibility

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Thu, 17 Aug 2000 08:30:23 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103222-2000.08.17-07.36.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill,

Have you tried Digi-Key? http://www.digikey.com

What I like best about their web site is that they list how many they have in stock.

- Steve, N7HPR
  n7hpr@tapr.org

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Bill Ellis
> Sent: Wednesday, August 16, 2000 11:08 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] LCD Availibility
>
>
> Good News, I got my hard wired T238 working at first power-up. (I think)
> As I am using a 1 x 20 display instead of a 4 x 20 display and the
> messages are broken up due to this but it seems to be working.

>
> Bad News, As of Aug. 16 The 4 x 20 LCD Seiko L234B1J000 Mouser stock #
> 628-L2034B1J are not in stock. I was told there was a world-wide
> shortage of driver chips and Mouser will not take any more orders.
>
> I found an equivalent display from AND. The AND 721GST Newark P/N 914661
> However Newark is out of stock and has a delivery date to them of Sept.
> 25. (I would guess this may slip) So it seems the displays are very hard
> to find. "son of T238" or "T-238 lite" may have to use a different
> display platform.... Anyone know where to purchase one of these
> displays?
> Delbert N5ZTW
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

155. [wxsig] RE: LCD availability

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Thu, 17 Aug 2000 08:17:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103248-2000.08.17-10.09.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Y'all are gonna freak when I say this, but a year ago I watched at least 50
Orion P20011 4X20 LCD's go in the recycling bin. I culled 3 from the heap
before they went. They already have the header, so no soldering and they
have the LED backlight, but hardwired within the module (no external BL
wiring needed). They even have a nice softwired harness that terminates in
a 2X10 connector. Dunno if the pinout is right for the '238's header (I
used the ribbon from the kit). These work great!
The two LCD's that came with my '238 kits have not been out of the packages.
In view of the shortage, I'm reluctant to part with them. I could part with
two displays, but the quandary is which to keep. I'm thinking it might be
advantageous to be able to switch off the display to reduce power
consumption and extend the life of the backlight. I don't have the specs
for the Orion part, but I surmise that cutting a trace would allow external
(switched) power to the backlight. What can I say? Ima pig with my parts
(just ask my SO).

What say you?

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>

156. [wxsig] Re: LCD Availibility

From: Doug <dbuhrman@radiks.net>
Date: Thu, 17 Aug 2000 18:43:13 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103338-2000.08.17-18.49.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill Ellis wrote:

> Good News, I got my hard wired T238 working at first power-up. (I think)
> As I am using a 1 x 20 display instead of a 4 x 20 display and the
> messages are broken up due to this but it seems to be working.
>
> Bad News, As of Aug. 16 The 4 x 20 LCD Seiko L234B1J000 Mouser stock #
> 628-L2034B1J are not in stock. I was told there was a world-wide
> shortage of driver chips and Mouser will not take any more orders.
>
> I found an equivalent display from AND. The AND 721GST Newark P/N 914661
> However Newark is out of stock and has a delivery date to them of Sept.
> 25. (I would guess this may slip) So it seems the displays are very hard
> to find. "son of T238" or "T-238 lite" may have to use a different
> display platform.... Anyone know where to purchase one of these
> displays?
> Delbert N5ZTW
>
> ---
> You are currently subscribed to wxsig as: dbuhrman@radiks.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Bill: Have you tried Marlin P. Jones in FL? I bought some 20x4 LCD units that work great on the
T238 for $7 each. I had to remove the connector as it was too short. Thought I would let you know.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

157. [wxsig] Re: LCD Availibility

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 17 Aug 2000 21:43:25 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103359-2000.08.17-20.49.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug what is the part number from MP Jones ... ???

> -----Original Message-----
> From: Doug
> Sent: Thursday, August 17, 2000 8:43 PM
>
> Bill: Have you tried Marlin P. Jones in FL? I bought some
> 20x4 LCD units that work great on the
> T238 for $7 each. I had to remove the connector as it was
> too short. Thought I would let you know.
>
> Doug K0DSP
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

158. [wxsig] Re: LCD Availibility

From: Doug <dbuhrman@radiks.net>
Date: Thu, 17 Aug 2000 21:16:06 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103361-2000.08.17-21.22.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Brian B. Riley" wrote:

> Doug what is the part number from MP Jones ... ???
>
> > -----Original Message-----
> > From: Doug
> > Sent: Thursday, August 17, 2000 8:43 PM
> >
> > Bill: Have you tried Marlin P. Jones in FL? I bought some
> > 20x4 LCD units that work great on the
> > T238 for $7 each. I had to remove the connector as it was
> > too short. Thought I would let you know.
> >
> > Doug K0DSP
> >
>
> ---
> You are currently subscribed to wxsig as: dbuhrman@radiks.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

OOOPPPPS! I have egg on my face on this one! I purchased the 20x4 LCD from All Electronics, part
#LCD-46. 800-826-5432 or http://allelectronics.com. Sorry to lead everyone astray.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

159. [wxsig] RE: LCD availability

From: William Beals <will@beals5.com>
Date: Thu, 17 Aug 2000 21:35:13 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103369-2000.08.17-22.41.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kyle:

I covet displays too. I acquired a bunch of displays a while back, but alas they are not good for this project. Usually the backlight module is pretty seperate from the LCD electronics board, so finding the trace or wire to cut should be pretty easy and not too hazardous.

will

-----Original Message-----
From: Ehler, Kyle [SMTP:kehler@lsil.com]
Sent: Thursday, August 17, 2000 7:18 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: LCD availability

Y'all are gonna freak when I say this, but a year ago I watched at least 50 Orion P20011 4X20 LCD's go in the recycling bin. I culled 3 from the heap before they went. They already have the header, so no soldering and they have the LED backlight, but hardwired within the module (no external BL wiring needed). They even have a nice softwired harness that terminates in a 2X10 connector. Dunno if the pinout is right for the '238's header (I used the ribbon from the kit). These work great!
The two LCD's that came with my '238 kits have not been out of the packages.
In view of the shortage, I'm reluctant to part with them. I could part with
two displays, but the quandary is which to keep. I'm thinking it might be advantageous to be able to switch off the display to reduce power consumption and extend the life of the backlight. I don't have the specs for the Orion part, but I surmise that cutting a trace would allow external (switched) power to the backlight. What can I say? Ima pig with my parts (just ask my SO).

What say you?

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>

 << File: ATT00001.html >>


```
begin 600 WINMAIL.DAT
M>)\^(@8#`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`A````4D4Z(%MW>'-I
M9UT@4D4Z($Q#1"!A=F%I;&%B:6QI='D`V@H!!8 #``X```#0!P@`$0`5`",`
M#0`$`#D!`2" `P`.````T <(`!$`%0`=`"X`! !4`0$)@ $`(0```#<Q1C="
M,#A#.#0W-$0T,3%!.#4V,# P,$4X.4(S0S Y`/X&`0.0!@"@" ``(0````L`
M`@`!````"P`C```````#`"8```````L`*0```````P`N```````#`#8`````
M`$ `.0# 1&]1Q0C `1X`< `!````(0``%)%.B!;=WAS:6==(%)%.B!,0T0@
M879A:6QA8FEL:71Y``````(!<0`!````%@`````' ",519HRP]W)TA!'4J%8`
M`.B;/ D``!X``@P!````!0```%--5% `````'@`?# $````0````=VEL;$!B
M96%L<S4N8V]M``,`!A!2`M# `P`'$/<$```>``@0`0```&4```!+64Q%.DE#
M3U9%5$1)4U!,05E35$]/24%#455)4D5$04)53D-(3T9$25-03$%94T%72$E,
M14)!0TLL0E5404Q!4U1(15E!4D5.3U1'3T]$1D]25$A)4U!23TI%0U154U5!
M3$Q9``````(!"1 !````?P4``L%```[" ``3%I&=6]%:BT_``H!`P'W`J0#
MXP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *
M@78(D'=K"X!DVC0,8&,`4 L#8P!!"V! ;F<Q,#,S"Z8@X$MY;&4Z"J(*A J
ME$D@!:!V#[ @9 0`!0M1>00@=&]O+B#&(!@``-!Q=6D)<1F $"!B=6X/8"!O
M9M,8>!H@=V@#$&4:, #07&LL&C$%0 = 81CQ:(QE>1F "7 @;F\%0'YG&2 :
M``(0!< <T 0`("D1,&]J!9!T&4%5<SIU!T!L'0`<T1O3;&GL9V@%0 1A=1NQ
M'E,/L)9T'0`/H' $D&%T&\"#`U(?DTQ#1"!E%Q#W'M #8 ,`8P0@!N +$1P@
MW'-O'> 4P0N 9Q^3(S#_`- ;P 6Q`_ =,1D0&! <4=1S: A@;!H`8AO (26^
M91R@'0$4T!U3&1$@#W#F>@L1"&!S+A=*`_ ?8.<72@KT(" S-@% %: !0 \>
```

```
M@2'P'M 0=#$V("WU+.)/!1!G"X '0 70!Y#P<V%G92SC%T8K]"O!@PL3*_9I
M+3$T- % <2 @,3@P`4 ,T#"#8EP@1@-A%S ,DF(/T$4::!<0<AP@%O(@6U-
M3510.FME,K) DFP`D&PN!:!M71=%3S&P!F ",#(75&@(<'/&9!C0'"!!=6<H
M\ 5 '#$W'" !T#$0(#<Z2S#P#^!--,=4;S6806!04B!76 8`(;!COP<Q&6 "
M, 20!Y %0$<#8&1U<#3(=6(>LC(76R1W> "09UT'\$4Z62*C878+< M@8@,0
M:?\A8"Z/+YHK1 NV%U,*XPJ W%DG'U$=$QV@;BV (A'])W!K&W$)\!EA+? ?
M@@0`^1PE('DG< 7 +@`D,!@`_G<AX ]@&?(%0!<0'* %0$XU034M,0(@(% W
M<3&P,2 T6!;!(K$G!""/14$+@!^3"7!C>6,@('LDH3Y ;AE#)B ?8!GQ,_LB
M&!S@83M%)M =\23Q'.)>=S5A&4$V(!SR;$,A9/\=``]P&$!+-@2!) ,=8"01
M?R:@!G$DH2?"'-(71$XG3-Y%(M ?YQPD#W%D):(:`"\#\!XQ2.0@A2A/865X
MLSJ1+8)"3"F&3^-N">#I`0!D*4TF91A `Z!.(_\:("-A&\ D( & 4Q0/<590
M[P01'-!&$3J1;2UQ(? $(.<+@1=3&B R6!8@&!%"T/<>P06P&4%$&E!/80:0
M'Y/^< N "& %0!Y1+4$@41WTX1O )S(S.$AQ3K14@)Y)%T0H\!GQ20-I8@;@
M]P.@(B<4L'16M0^@&W %L/=#4 G!(> A%T1-41D`8C#S2#59<V-A!X!38R!P
M'0#_7G)A4E[!3C(=8B;00Y%=(K\:H5RS&_$N`2D&.G @%'*?9O8F80`@+@$<
M($DG(E#_"7 *0![0`' H(F=A`"!DM/T<T6U*%":#:P<71&."&(;_'"0?HAFP
M)\$*P!T``E$;@?\:<27Q,\ AH!E":@%3DA2QOR2P/G @<" S)M!:E60]\/\"
M,"X!*.$EXB;1`: ;L27Q_P/A1;$:D5R4&(4EX@EQ%1!U)N%O3.!R%T1;81\P
M;?\%,$=")\)4TE!$1C &D"51SUR4'^<90RC0;B=2LDY%_QB@!9 /,!=37?9'
M)&L"'"3_0\$(<%GP8@%D)!Q0=V!0`G\E!6(P)I(?47905,<71"C?=#16D78T
M)>)Y+E=D-$.E_C\940# 7.$DL&3&:P)[=3PH:C;R'*!#4&414T^O5K 72H,S
M0^)Y"& _%TI7,Q,RHQE0:Q<!+C/<(#X\`, #$!D0,["*+VT^YQE0*BY!@3P\
M,< ;H3V 6$%45#>!1[ N(%!M70,@/HT`%T01\0"0H `#`! 0``````,`$1 "
M`````P" $/____] ``<P8-V:CL0(P % ``@P8-V:CL0(P $+``" "" &````
M``# ````````1@`````#A0`````````,``H (( 8``````, ```````!&````
M`!"%`````````P`%@ @@!@`````P ```````$8`````4H4``+<-```#``F
M"" &``````# ````````1@`````!A0```````!X`(H (( 8``````, ``````
M``!&`````%2%```!````! ```#@N, `+`": "" &``````# ````````1@``
M```.A0`````````,`)X (( 8``````, ```````!&`````!&%`````````P`I
M@ @@!@``````P ```````$8`````&(4````````>`#B "" &``````# ````
M````1@`````VA0```0````$`````````'@`Y@ @@!@``````P ```````$8`
M````-X4```$````!`````````!X`.H (( 8``````, ```````!&`````#B%
L```!`````0`````````>`#T``0````4```!213H@``````,`#33]-P``CS:%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

160. [wxsig] Re: LCD Availibility

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Fri, 18 Aug 2000 06:40:39 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103411-2000.08.18-06.47.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Got two on order thanks for all the inputs folks! I should have my
system up and running soon now!
 WD Ellis N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

161. [wxsig] ESD and WS-1/T238

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Fri, 18 Aug 2000 16:03:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103483-2000.08.18-16.26.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm trying this in non-MIME format. . .to limit msg bulk.

Steve,
Thanks for the support in event I destroy my T238 while testing for ESD.
I will push for ESD testing on the weather station, but I could destroy the
wx-1 as well.
ESD is a fact of life, I would like to make this gadget into a reliable and
long lived item.

The problem is, there has not been an agreement regarding the enclosure for
the completed rig.
If there was a standardized enclosure, then testing this would have some
level of reproducibility and fixes.
ESD is a finicky critter. It likes to find odd paths to ground. The
T238/Wx combo has no earth ground (and possibly should not) since it is
powered by any number of methods (wall-warts, batteries, etc.).

Our lab is accustomed to testing products with cordage intended for earth
grounding which provides a drainage path for RF, AC leakage current and ESD.
We have zero experience with ungrounded devices so this could be very
educating.

As far as ferrites (prayer beads as we call them around here) it is best to
locate them as near the source of the impulse as possible, but these are
more for RFI control than ESD. The best way to stop ESD is to provide local
grounded structures like cases and bezels to shunt the energy around and
away from the device. Once (if) it gets in, it is just bad.

Kyle KC0IQE

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

162. [wxsig] Re: ESD and WS-1/T238

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sat, 19 Aug 2000 07:21:06 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103583-2000.08.19-07.27.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Ehler, Kyle" wrote:
>
> I'm trying this in non-MIME format. . .to limit msg bulk.

Thank you

I really prefer to NOT get HTML-encoded/MIME-encoded messages, for a
variety of security reasons. I'm paid to be paranoid at work. It
carries over to the house, too!

Again, thanks for NOT encoding the message!

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

163. [wxsig] Re: ESD and WS-1/T238

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sat, 19 Aug 2000 07:30:18 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103585-2000.08.19-07.36.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Ehler, Kyle" wrote:
>
...
> The problem is, there has not been an agreement regarding the enclosure for
> the completed rig.
> If there was a standardized enclosure, then testing this would have some
> level of reproducibility and fixes.
> ESD is a finicky critter. It likes to find odd paths to ground. The
> T238/Wx combo has no earth ground (and possibly should not) since it is
> powered by any number of methods (wall-warts, batteries, etc.).
>
> Our lab is accustomed to testing products with cordage intended for earth
> grounding which provides a drainage path for RF, AC leakage current and ESD.
> We have zero experience with ungrounded devices so this could be very
> educating.

In general, non-sinked devices are somewhat more immune to ESD than
those sunk to earth-ground, in my experience. We tested an intravenous
infusion pump destructively for ESD susceptibility. The one tested
while powered by 28vDC and well grounded failed considerably earlier and
much more interestingly than the second test run under isolated battery
power.

> As far as ferrites (prayer beads as we call them around here) it is best to
> locate them as near the source of the impulse as possible, but these are
> more for RFI control than ESD. The best way to stop ESD is to provide local
> grounded structures like cases and bezels to shunt the energy around and
> away from the device. Once (if) it gets in, it is just bad.

My experience with ferrite beads is similar to Kyle's. Ferrite is not a
viable method of protecting against high potential impulse noise or
damage. It's great for loading power lines and changing their
characteristic impedence, unbalancing them and making them less likely
to act as antennas. As far as impule susceptibility goes, they might as
well not be there. FWIW, I asked this question while we were building
the IV pumps for a Spacelab mission in 1992 (STS-48/Spacelab-J: Fluid
Therapy System). Imed Corp. were unsure. They asked their testing
house, and the testing house gave us the skinny. When I was talking to
our NASA/Johnson Space Center EMI/EMC guy, he just snorted and informed
me of the real facts, in somewhat condescending detail, of using ferrite
to attempt to suppress ESD/EMP. The kind form of his lecture was that,
perhaps making a case out of ferrite beads, suitably crushed and
reformed, might help, but he figured it'd just make a heavier case with
no real ESD benefit.

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

164. [wxsig] Ferrites

From: William Beals <will@beals5.com>
Date: Sat, 19 Aug 2000 15:56:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103667-2000.08.19-16.58.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

The main reason I wanted ferrites wasn't for ESD, it was mainly to keep RF
out of the internals once the board was inside a case. I never thought
about them being useful for ESD and it sounds like I shouldn't either!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

165. [wxsig] Version 1.10

From: Doug <dbuhrman@radiks.net>
Date: Sat, 19 Aug 2000 22:32:35 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103698-2000.08.19-22.38.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will:
I just downloaded ver 1.10 into my board and also have the 1994 iButton can hooked up. All seems
to work fine. Some questions:
1) The Rain counter has a number even though I don't have a rain gauge connected. I even went
through the setup to show it didn't exist but everytime I power-up it seems to jam either the number
15 or 47 in there.
2) What do you mean by a "full download " to get into debug? I would like to know more about this

debug mode.
3) I built a surface mount version of the T238 and seems to a number of tries to get the development
software to recognize it. I wouldn't think there would be anything different between the SMT and
the DIP version of the chip. Any quick thoughts?

Thanks

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

166. [wxsig] RE: Version 1.10

From: William Beals <will@beals5.com>
Date: Sat, 19 Aug 2000 22:06:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103701-2000.08.19-23.08.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

Thanks for the good news. In answer to your questions:

1) The rain counter itself will always have a count as the counter in the
rain guage has a battery in it and the counter can't get reset. Can you
tell me which counters you are talking about. If you power up without a
rain guage plugged in, I should show all 0's or dashes depending. If not,
I have some work to do

2) A "full download" is where you use the Motorola development tools to
erase ALL the flash (including your settings) and program the micro with
not only a new application but also the latest-and-greatest monitor
program. The monitor program doesn't change much and shouldn't be
necessary to change at all unless I have a major change to the system. The
change I made on 1.10 was to prevent some display problems when you get
into the monitor. The problems could be avoided by simply cycling power.

3) I would hope that the SMT and DIP versions of the micro should be the
same. Make sure the diode used for serial communications is a schotkey
diode. If it isn't communications could be problematic. Also, make sure
you understand the strange security system the 6808 uses for debug mode.
 I've slowly gotten comfortable with it, but it seems to get in the way
quite a bit. Also make sure that you are providing a clean +9V to the
micro to get into debugmode. Simply powering up both the MAX232 and CPU
simultaneously does NOT work reliably. Power to the MAX232 must come up
before the CPU to allow the MAX chip to get up to +9V before the CPU comes
out of reset. I solved this by always powering the MAX chip and having the
"reset" button only cycle power to the CPU.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Saturday, August 19, 2000 10:33 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Version 1.10

Will:
I just downloaded ver 1.10 into my board and also have the 1994 iButton
can hooked up. All seems
to work fine. Some questions:
1) The Rain counter has a number even though I don't have a rain gauge
connected. I even went
through the setup to show it didn't exist but everytime I power-up it seems
to jam either the number
15 or 47 in there.
2) What do you mean by a "full download " to get into debug? I would like
to know more about this
debug mode.
3) I built a surface mount version of the T238 and seems to a number of
tries to get the development
software to recognize it. I wouldn't think there would be anything
different between the SMT and
the DIP version of the chip. Any quick thoughts?

Thanks

Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(@@$`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`9````4D4Z(%MW>'-I
M9UT@5F5R<VEO;B Q+C$P`,$``06 `P`.````T <(`!,`%@`&`#D`!@!-`0$@
M@ ,`#@```- '" `3`!4`-P`-``8`40$!"8 !`"$````X-#4U-3<P.3%"-S9$
M-#$Q03@U-C P,#!%.#E",T,P.0#@!@$#D 8`_ H``"$````+``(``0````L`
M(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`@()T
M%5P*P $>`' ``0```!D```!213H@6W=X<VEG72!697)S:6]N(#$N,3 ``````
M`@%Q``$````6``````< *7!5T"5=5A78;$=2H5@``Z)L\"0```@`># $````%
M````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&$..'
M500#``<09@@``!X`"! !````90```$1/54<Z5$A!3DM31D]25$A%1T]/1$Y%
M5U-)3D%.4U=%4E1/64]54E%515-424].4SHQ*51(15)!24Y#3U5.5$522513
M14Q&5TE,3$%,5T%94TA!5D5!0T]53E1!4U1(14-/54X``````@$)$ $```#C
M!P``WP<``*$,``!,6D9ULZ.'/#\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"
M@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@8P!0
M"P-C`$$+8$!N9S$P,S,+IB!R1 A@9SH*H@J$"H!4.0]P;FL$( (0!<!T:)!E
M(&=O!' @;@?08',N("!)`Z `<7<C!) 8H&\@>0AA('%1"E!S=&D"(',7.S&L
M*2 8`!C0<@MQ( 6@)G4",!HA:70/H&QF&B #\&P#( = =V%YZP0@#W!V&-!A
M'.09T 0@'QBR'/<#H!BR'*-G=6&>9QC0#W $(![P8F$"0'T$D'D@4AUP&=$9
M(!^J8_T`<"<%0"%0!4 )< ^A&8'^0P.1&H$8H!V@`R '@!W0_&AI#V <Y@0@
M)2(*P!C0M0&0;!2Q9QG0!N!U)*(F21W )2)P;QH2=7#_'=$8L"?Q'N$@V0M0
M%Q A4$L9( N +!F@(',I@6R?&2 K@0?@!T #(# G!""]!;%D'W 8P 0@`0!P
M"?#&9">1*"1N;W0K0AZC+G,#<"7!!;!K&D)D;X472C(<0$$@(F8KL!,#("_@
M=VX)`&%D(K\=8 0@)> $D!C0)2)U#Z#]&*--+F %L ;P'O !`![ _0D`< >
M'T$:4 ;P'X$:8$<$D!]P&-!!3$P8HV;3"V K@" H"X!C"D MLN\:= ^A&Q 6
M``',<0"+"$3#2;PG 86T8HVTF``-@_RE#+D(LL#&@(D >\!E!&=#^< M0)@`A
M\!LA(= IHC3@7QI@&+(+8!TP&P`M(L$M_PG!/&,EH (@'7 %L3AE&8'_'&(]
MG2_1!Y CX@]A%@`Y`=\5$"8@(L(KA"/B8AC0&4#Z8P>0<PK (D :44!U(?![
M+#,=$&Q"<2Z6'O `P&KO!;% =1I1&+)S'G =,#YV'T!U*V `P $`.@$@,2[_
M%B =T!]R&F 1,#0!'T$O$_TML',+42) .&$"8$9P,B/_)00D(@N 1<4]E3Z%
M2B<<\><KP4(1'K!O:0$`3<$B0,T`D&T+4") 8WDVL">2]2C#+A=*,QQ *V O
M8"NR'RF +8 8H4.!&+)3353A(K-$25 @'L /D!LB?RRP'< XZ"N%0A%%\SBP
M9?$9@4UA:R[Q"' S!"VP?P1Q,M(9(!AR#Z '(ASA;?] X ,`.Q0$(#(1'O $
M\"F _G15\") 5K,H)"*1! ! ,Z]8+$V'2B4[(6,9@4$[T?\K0 # 5?8RHQ30
M)I$!D"+5KQL`'*! H@^@8PAQ=$ZAPT9#&*,V.# X,M(85-\!`#N )[ $8AF"
M)R[B"0#>=SHQ&/ B`1S2;1AQ`9'_1! Y=!UP*T [@B*1#Z!*<G\:44M$&*,>
M41K!'7 >TF+_'7!=55W94=,FUCAA%' VX\<>\400`Y$K.59%MCDD[V9W+[)B
M8F*U4T[4*,,GD@\I(0;@.:$S(T%8,C/C$6 BPD-054ZR*[!?(;YE"&!C<%G!
M0 $'L$]2@*\O8PEP.O!DP7D9@5 HT_]%Q6^E0. ]85@15O%N\0$0_P6P,P1P
M4AI1+$$L$6]E0&'_!2!F9BDA&E%K4G4M=*(LH?\IH5.Q)&8K80;P'L BXC(1
M?TZ1'C5N5W:K(L(>H7R6(O\D8S'P.X$:4 .@.A-/,BJ!?W,J<%%0"QWB%TH*
M]#KP,SXV`4 5H % .&$=,&-TH1!T,38@+84"3P40]F<+@%?A34)R(5"%`Q=&
M#X04@^$+$X06:2TQ-/8T`4 Z\#%A@ % #-"(H[AB($8#81<P#))B%M1$(%M2
M85 Z9#N :+IR`X% '* ML!A +AE _'1=%T6)T 9@`C"*-P80UG0(<"SP>2M
M01<0=&(\,3DK0 '0B3!(`# Z2Q9 <P!-C+=4;XHW5*!!4%(@5W<`4RV WF-7
MTAFP'3$]4D<#8"D@,8RX=6)JA$&*-UMWPG@`D&==(%93-$@#?X:OA[J#9 NV
M%U,*XPJ 5_<=\1<U*V!J=&(Q=BKQ4R'[2 1+@VTB0&\!"QB$SO#IQZC&+*/
M(#DT'6!"?R3[(\%1<6]5\!D@*2!=4P,@_V83%T0:42]CB' 90&VR+R*;&MX<
M-5(<NB&$;G4&T/\:(4CR&*$7`28@*V OX"/BVQZE(-1A%Q ?PFY"01TP_F1Z
MDZ43&A ",*!EBZ"E@W]%\P^P=^0K\R*1+;!!PV7^> 0`0?$IH30!(C ;$"6Q
M6RM@*,,M*2%EZFHXL65?*6$:(AC!I*0;U34LLC3>-R!5"7!0!3#!5U'B+^!_
M)1,'@ .1>Z(Q#3$`;%]GOC]ZHE$D.O!5\1I1:RY0_P?@!& G(2?3>T,71&)9
M4'GO.X #$"FR5B%F`- ^TA\R^U,E4Z94;]!AH$$S9B:DA_]3L@B!9E=6<S0(
M%%T0O$ & 7QY0)R(:8 EP!:!G`P!Z_QC0:"-1!2/B>U$8,+"4417]3>)NK&#"
M`2>P+; !(#)A_Q]!0A"_P GA4AJHYAC04NG?4Z9W(EU2PU!G@F/",J6"/1V
M/Q=/H%7)%(K#2S"X1%-0@DX*@(9W62;E[V!1Q"(Z,58@8@3R0A BX7<Y894"
M'V$Z'="DP3O!0-58$7 RX7(>P"Y8$1>E_QI@'1#.9S=QG/(AT!7A+Y#?7/$#
M$1I1:P$>P"V4\XB0P#4W,#=-0#KP&P#7&7 !D!$P+@6P9\D:$?$"`-<```,`
M$! ``````P`1$ `````#`( 0_____T `!S @5:=Q6@K `4 `"# @5:=Q6@K
M`0L``( (( 8``````, ```````!&``````.%`````````P`"@ @@!@``````
```

```
MP ```````$8`````$(4````````#``6 "" &``````# ````````1@````!2
MA0``MPT```,`"8 (( 8``````, ```````!&``````&%`````````'@`B@ @@
M!@``````P ```````$8`````5(4```$````$````."XP``L`)H (( 8``````
M`, ```````!&``````Z%`````````P`G@ @@!@`````P ```````$8``````
M$84```````#`"F "" &``````# ````````1@`````8A0```````!X`.( (
M( 8``````, ```````!&````#:%```!`````0`````````>`#F "" &````
M``# ````````1@`````WA0```0````$`````````'@`Z@ @@!@```````P ``
M`````$8`````.(4```$````!`````````!X`/0`!````!0```%)%.B ``````
*`P`--/TW``!J(X4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

167. [wxsig] Wx Phenomena

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sun, 20 Aug 2000 11:10:55 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103754-2000.08.20-11.14.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Now that I'm sending data to the APRS network with my T238 it has been fun
looking at trends! http://www.findu.com/cgi-bin/wxpage.cgi?wn0x-3

I noticed that many times in my location, the wind apparently starts in the
east and gradually moves to the west througout the day. Kind of a diagonal
stripe for each day. Is this typical Russ?

Also, many wx stations on findu.com apparently show 0 degrees or "North"
when there is no wind. I thought my station was broke, until I realized it
was pointless to send wind direction with no wind!

I guess we will need the humidty sensor to report Dew Point, is this
correct?

Barometric pressure shows very little variation on most of the stations I
monitor. There appear to be slight daily changes and longer trends that
take a few days to notice. Why do we send the data in Millibar format? Is
that a standard?

Will, can I log to my pc at the same time I am sending to the APRS network?
I really like the stuff at findu.com, but there are holes in the data,
probably due to APRS network inconsistencies or IGate problems. I would
like to keep the data on hand myself.

Regards,

Rich Beckwith, Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

168. [wxsig] Re: Wx Phenomena

From: Steve Dimse K4HG <sdimse@netrox.net>
Date: Sun, 20 Aug 2000 12:32:14 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103762-2000.08.20-11.39.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 8/20/00 12:10 PM Rich Beckwith (wn0x@earthlink.net) wrote:

>Now that I'm sending data to the APRS network with my T238 it has been fun
>looking at trends! http://www.findu.com/cgi-bin/wxpage.cgi?wn0x-3
>
At the risk of wrenching my shoulder by patting myself on the back, that
is one of the cooler things I've done.

>I noticed that many times in my location, the wind apparently starts in the
>east and gradually moves to the west througout the day. Kind of a diagonal

>stripe for each day. Is this typical Russ?
>
You can spot a landlubber a mile away ;-) It is very dependent on
location. In the Keys we tend to get a shift in the summer tradewinds
from NE to SE. When I lived in San Diego, the key to winning the evening
sailing races was to anticipate the wind shift from west to north as the
onshore breeze died close to sunset.

>Also, many wx stations on findu.com apparently show 0 degrees or "North"
>when there is no wind. I thought my station was broke, until I realized it
>was pointless to send wind direction with no wind!
>
This depends on the weather station. Peet Brothers stay fixed on the last
value they reported, a consequence of the method they use to measure
direction. I had considered not printing the direction for 0 wind on the
graphic, but one thing I like to see is how frequently the reports are
getting to the internet. All the other displays are line graphs, and gaps
are filled in unless they exceed some threshold, 40 pixels rings a bell
but I'd have to check the code. So the wind gragh is the only visual
display I have of report frequency.

>I guess we will need the humidty sensor to report Dew Point, is this
>correct?
>
Yup.

>Barometric pressure shows very little variation on most of the stations I
>monitor. There appear to be slight daily changes and longer trends that
>take a few days to notice. Why do we send the data in Millibar format? Is
>that a standard?
>
That is the units the weather service reports in, and the native format
for APRS. It really doesn't matter what you report, it is easy to
convert. I could just as easily have a display in inches Hg. Home
stations tend to be poorly calibrated in any event, and what matters are
the changes rather than the absolute values.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

169. [wxsig] RE: Wx Phenomena

From: William Beals <will@beals5.com>
Date: Sun, 20 Aug 2000 12:52:06 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103793-2000.08.20-13.57.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

You can log the data as well as send it. You will need to make a special
cable that would send the data to both your PC as well as your TNC. When
you make the cable, route all the lines between the TNC and T238 in the
normal manner. Then, route just the ground, and T238 Tx line to the PCs
ground and Rx line. You may also need to wire up a few of the handshaking
signals to keep your PC happy. I've always had to experiment to find out
which ones are important.

If you are really creative, you can create a cable for the T238 to PC that
disconnects the T238 Rx line so there is no contention with the TNCs Rx
line and then plug cables into both the PC and TNC ports of the T238.
 Hopefully this makes sense. I should put something like this in a FAQ as
you are not the first person to ask.

will

Will, can I log to my pc at the same time I am sending to the APRS network?
I really like the stuff at findu.com, but there are holes in the data,
probably due to APRS network inconsistencies or IGate problems. I would
like to keep the data on hand myself.

Regards,
Rich Beckwith, Wn0x

begin 600 WINMAIL.DAT
M>)\^(B$2`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"``````@`"```$$

```
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`9````4D4Z(%MW>'-I
M9UT@5W@@4&AE;F]M96YA`(4(`06 `P`.````T <(`!0`# `T``8````Y`0$@
M@ ,`#@```- '" `4``P`+@`X````90$!"8 !`"$````Q-T9!0S0X13DW-S9$
M-#$Q03@U-C P,#!%.#E",T,P.0`5!P$#D 8`J 8``"$````+``(``0````L`
M(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`8'"P
MO-<*P $>`' ``0```!D```!213H@6W=X<VEG72!7>"!0:&5N;VUE;F$`````
M`@%Q``$````6`````< *U[RGCL3Z&':7$=2H5@``Z)L\"0```@`>#  $````%
M````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&$!=<
MZP8#``<05@,``!X`"! !````90```%))0T@Z64]50T%.3$]'5$A%1$%404%3
M5T5,3$%34T5.1$E464]55TE,3$Y%14143TU!2T5!4U!%0TE!3$-!0DQ%5$A!
M5%=/54Q$4T5.1%1(141!5$%43T)/5$A93U524$-!4U<``````@$)$ $```.
M`P``B@,``$$%``!,6D9UF21VF3\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"
M@"9]"H (R" ["6\R-98U`H *@78(D'=K"X"T9#0,8&,`4 L#8P!!@0M@;F<Q
M,#,S"Z9U!_!I#V Z"J(*A J 61D(8"!C`Y$)`&<@="!H92!D80&0(&'Q!"!W
M96P#(!?!#Z 30, @:70N(" 6<@/PC1@1;@G@&*!T;R `P.9K%U 7H'-P!9 '
M,1:AOP)@%U 7,!> %^ (8&P8H)\8<Q<W&?$&X!<P('D(81@@4$,7NAV#5$Y#
M_1CA5Q= `Z =@1H4%S(;$^0L( -@=70:41@1%S+V; N !Y%B#[ 7\!^!%S*'
M'P$7L!B15#(S.!BP?2*4;@6P`, #( .!&:!RC1CA5!]Q(-9J=7,%0#\7,@G
M"& 30"#0(S=4>'\APQGB%S(=T 0@)H0C(U+7)Z08Y0# >2%!<QH`&::C`_ )
M<"!U<!IA9@?1W&]F%R,/<!- <P]P$R%S%Q `D&=N*I$9XAI 94<KP!V&#W!P
M<'D8X4GT)W8A,G<J8 0@#W 9TWQE>!J@!1 '@ (P&>)F[Q,Q+# A$!?@:!5Q
M+# A\O<*P!=0!W!P"1$`<!C2%;K^22Q0'[(RP@EP(5$J< 4`^35 =&DOD"#0
M'[(6LC6C_QI2&Q0"$ 7 (K,C@AGQ'=&=&W-D! `%H"3!8W0MT?\X!BEU&& H
M(S+2!" D,!:@^P(A,1%I`B 901U1(K4$(-\ZAB,R%S$#H M0=1<0&Q/_!" +
M@!T&*$0C)",!,R($(*<L12-R&.%(;QJ@9AO@_S5Q%S [D1HB&%,/H"]"&&#Z
M:!O3<#'A*K '@$+!+4$?(= @$SN1(\$7H$9!4?\>=3*S)# F)#& #Y %0##!
MSRJP(I$:`!? :RX5NAE2YQ6X"S AT#,V`4 4$ % WG #8"$@.; 5M%<982#0
MGQ:R0_ 6\QH!*G!P8Q>P^28D<V$'@!<@!W%#X4Y QQAC+3(H%4%04@7P&:#S
M(E %L&L_-"4U)D5E.N&<='4!($VR,8)U+@6@^FT@T&(QX3LT,L)$(#\4[1<G
M+!6T2V%B&R$J<%,@_R?S4!HCL3EA`) F$ GP&L!S!Y$%L4E'-O)6`AM ;?YS
M0\,;PQ6T160N!1<W/'$G++)-40^@;&9(^U)EFF<+$7-5E15B($(%D-9K/*(@
MT%<*``@5NA!A`@!A`````P`0$ `````#`!$0``````,`@!#_____0 ``,.!W
MOP/7"L !0 `(,.!WOP/7"L !"P``@ @@!@`````P ```````$8``````X4`
M```````#``* "" &``````# ````````1@`````0A0````````,`!8 (( 8`
M`````, ```````!&`````%*%``"W#0``P`)@ @@!@`````P ```````$8`
M`````84````````>`"* "" &``````# ````````1@````!4A0```0````0`
M```X+C `"P`F@ @@!@`````P ```````$8`````#H4````````#`"> "" &
M``````# ````````1@`````1A0````````,`*8 (( 8``````, ```````!&
M`````!B%````````'@`X@ @@!@`````P ```````$8`````-H4```$````!
M`````````!X`.8 (( 8``````, ```````!&`````#>%```!`````0``````
M```>`#J "" &``````# ````````1@````XA0```0```$`````````'@`]
;``$````%````4D4Z( `````#``TT_3<``!^2
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

170. [wxsig] RE: Version 1.10

From: Doug <dbuhrman@radiks.net>
Date: Sun, 20 Aug 2000 15:04:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103804-2000.08.20-15.10.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I left out a very important word. My note was I was seeing a number show up in the "error" counter. It never increments it just sits there with a number. The number of times I power-cycled the board I would see the number 15 or 47 show up I tried twice to clear it by going to the rain gauge screen and the software would say no rain gauge found then I would exit. That method worked on ver 1.09 to clear out a rain gauge that you had but then removed.   Sorry to have confused you on that one.

> As far as a full download then I'm set other than learning 68xx asm code. I was brought up on
> 8085 and Z80, and recently had started to play with the PIC stuff . I was trying to build up an
> interface using the PIC16F84 but it just didn't have enough memory to do the basic stuff. I was
> getting ready to order the 16F877 when you're project came up.

> I didn't see anything in any of the manuals I downloaded that would suggest a difference, but I
> built 2 boards and both acted strange when I went to download your code into them. The two DIP
> boards I built downloaded just fine. I am using Schottkey diodes on both boards.

I'll do some more reading on this debug mode as that is totally new to me. I finally did get the
SMT board to take the code but I had to power-cycle it a number of times then all of the sudden it
started to communicate! Your insite on the MAX232 I think may be a good one. Thanks again for the
help.

Doug

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

171. [wxsig] RE: Version 1.10

From: William Beals <will@beals5.com>
Date: Sun, 20 Aug 2000 16:43:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103834-2000.08.20-17.54.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

If the error counter isn't getting cleared on power-up, that is a bug.
 Likey introduced when I put in the code to dynamically determine if the
counter was there or not. I'll add it to my list. Thanks for letting me
know.

It took me a while to figure out my flakey entry into debug mode was
related to the slow startup of the MAX chip. Fortunately, I have a cheap
digital silly-scope and was able to capture the event once I knew what to
look for. Good luck.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Sunday, August 20, 2000 3:04 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Version 1.10

I left out a very important word. My note was I was seeing a number show
up in the "error"
counter. It never increments it just sits there with a number. The number
of times I power-cycled
the board I would see the number 15 or 47 show up I tried twice to clear
it by going to the rain
gauge screen and the software would say no rain gauge found then I would
exit. That method worked
on ver 1.09 to clear out a rain gauge that you had but then removed.
  Sorry to have confused you on
that one.

> As far as a full download then I'm set other than learning 68xx asm code.
 I was brought up on
> 8085 and Z80, and recently had started to play with the PIC stuff . I
was trying to build up an
> interface using the PIC16F84 but it just didn't have enough memory to do
the basic stuff. I was
> getting ready to order the 16F877 when you're project came up.

> I didn't see anything in any of the manuals I downloaded that would
suggest a difference, but I
> built 2 boards and both acted strange when I went to download your code
into them. The two DIP
> boards I built downloaded just fine. I am using Schottkey diodes on both
boards.

I'll do some more reading on this debug mode as that is totally new to me.
 I finally did get the
SMT board to take the code but I had to power-cycle it a number of times
then all of the sudden it
started to communicate! Your insite on the MAX232 I think may be a good

one. Thanks again for the
help.

Doug

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(A 6`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`=````4D4Z(%MW>'-I
M9UT@4D4Z(%9E<G-I;VX@,2XQ, "R" $%@ ,`#@```- '" `4`! `*P`H````
M5@$!(( #``X```#0!P@`% `0`"<``0```"L!`0F `0`A````138Y13@W1#="
M,S<V1#0Q,4$X-38P,# P13@Y0C-#,#D`&@<!`Y &`#P*```A````"P"``$`
M```+`",`````````,`)@``````"P`I```````#`"X```````,`-@``````0 `Y
M`(!D_Q7X"L !'@!P``$````=````4D4Z(%MW>'-I9UT@4D4Z(%9E<G-I;VX@
M,2XQ, `````"`7$``0```!8````!P KX%?_7AY[G=K,1U*A6``#HFSP)```>
M`!X,`0````4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O
M;0`#``80@1A+(@,`!Q#.!@``'@`($ $```!E````1$]51SI)1E1(14524D]2
M0T]53E1%4DE33E1'151424Y'0TQ%05)%1$].4$]715(M55 L5$A!5$E304)5
M1TQ)2T5924Y44D]$54-%1%=(14Y)4%5424Y42$5#3T1%5$]$64Y!30`````"
M`0D0`0```" ````<!P``[0H``$Q:1G5?FY/_/P`*`0,!]P*D`^,"``&-HP0K
M<V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN
M9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF(')$"&!G.@JB"H0*@$G 9B!T:&4@
M!) #8%L%P 6@=0(P!) @! !NJB<%0&</L'0+@&<8P"QL90K "8 @`B @<(1O
M=P20+75P+!@AAF$%0 0`(&$@8A<0`"X@($QI:V5YMQE `C #8&05$!J!=QA
M]0.@21K0=1NQ`Z 8,@6@`P$`&"!O(&1Y;F'H;6EC!T!L', !`!D1/1]P;AA0
M!I >91CT=V$?!" 8,0EP&J %P&YO=%D<44DG'[ ;\&0:D&EK!4 ?`6T<P&P$
M`")R5/D/<&YK!" "$ 7 &D 9U,D'@"!K(E!W+A=+(U)\;VLE8AP`'9 #$![C
M9KQI9PAP(@$>$2.A9@M@WQRB"? =`!S#'Q%E'"$CD/\>PB&""7 +8!D0&I ?
M`1@RWG,)``?@(_ *P'0;0!J@L1@434%8&, GD' <4?Y&"1$8\"LQ'\ ;8!W@
M#W#>=B="#V :4"R@9"@@(T O!T KX ,0'\ M!/!O</\G0130(7,!H">T'Y %
M,"A"_Q@S+O ",!JA'5 =T26@!]%_'9 ;H1\!"0`G`22Q'%%'YR;P&I *0&-K
M)>L#\!^PYQ=*"O0CT#,V`4 5H % %Q$P(F %D'00=#$V('HM.5)/!1 OP!]0
M`R!-^0>0<V$9L#E3%T8X9#@Q@PL3.&9I+3$T- % <2/0,3@P`4 ,T#SS8B\M
MT -A%S ,DF(6U"!;0%--5% Z9!P@:#,@, !P0'(C`!R0<R[Y(&!T71=%/B &
M8 (P/H=24QCP9&$N@4$7$'4](_ @`= ;8 '0/8 @,T Z,#0@4$U!!U0";SZ'
M5$%04B!7]2U04S"P8P<Q'= 9`@>0'05 1P-@&T!!"'5B:B,XD3Z'6W=X`)!G
M7>$'\$4Z(%8$D "0&K'\,2X6(#K_/ HWM NV%U/_"N,7X23A`8 H<QP`+O I
MDEYM&N `( !P!4!W!;!D_1Q131S (E$JI!W@(8(/H&9E&?(<`&YU!M 9(7.N
M:"P1+)$>12(8<R(71'\8U2*"!4 @8$[!'-$%`&7O!X ", 0@(T%J0Q(`D%6Q
M_R'$`_ 8,%&G)!,84%'5+,+G!W,=X1KS8WD:,0LQ%V+?&#(&X L14-((8&P:
MD%%!DQ@C4=4Q-2(2-#=2-_\=T1T`") K80/P,R$QLAI"Y2,R8AS 9V\9\BN%
M0%#S"X$74V=A%Q KT551';'_,.(KLRS 7D :85M&0J B0?]@4QF@81,"$$)Q
M&"(=PEM4_&5X(T D%"BA#[!24!UQ/P6P'*!:)1JQ5/)*0# Y[UZ83F1CN1N#
M>0A@+L$:D.\<("-1':)586\N\$_B!@"?!; ID1\!+M,%H&YF0Q"_&H%J,@(@
M6C8;H0(@927K_CX/X"21"L$Q,B2@6W #(#ID&O!N"0!J@63$)VW_43$RX2'"
M&W(#H!I"`P`:`? V.'AX;_%QH!ZR(H+E(7-B1S%G: 5 +))@E=MO<#UP.%RP
M,.):/7 ;8/\PX@EP'5 ",!_!:G(L0RM4CPM1',!7$Q@R4$E#+#'Z=0$@('07
M*8%?M1P@`Q#_&I LD0!P;Q8<X020;\ S(<]#$%^S>40Y($8X1!!JLOM5YB^@
M9!ER+M,)\'3")6'O!&!L)'"@&"-B(9 ?@'FD_W06;Q89M@EP(P!L,T_!<C.[
M&%!]XC==$!V3:C$G(?'_.%%(,C'1)7$;0&ZM'>!_!?M;L@!P>1@P&?(>08B!
M++;]`X%U!T!0PG"F*U(;DEM5_Q<0&;!#(1P`+Z !("'A,Q'[&V!JLDEO%GM"
M0S%:Q!OA_S#Q!N!7,CB@&H$C\$!0%@#_*J%DU3+"@*-PQ6HQ&+(>T3LIPQ@Q
M;5?E7D ?$$1)_E"-IXZT'>".)(J95A,H$&]N@5VB'V!]!5,/8")@=/\<HB^@
M!'$$(!JQCU..I"7L_R+"@-%B4"5Q@%%@@8.!&?+_&K&(L00@*ADADQND'P`O
MX?\?P3."(W)T!):!'Z1_$!FB_Q@B%T0_<5K%*X(I$1YHC5/_:F-X8EF((S)1
MMMUC'9,,?H?\LMHOP(Q =L2- %T1WZ06@7&UM&/ ?@1D0(1Q@63^2$@N 5F$B
M`1Y4+3$R,_\18%W!B,$G$6-14@`;\5^0_S41;G(D)SIP8\(DLJ!'&$#^;(:\
M%O(VGJ_?%W$ZQZCA>QOP(?%C"'",X7=BB_!BOP3R4@`K8TD3;_%)H'=1\5V*
M,4"H`1X`#Z!R+O N_Z@!%T1$X%* `("S-E$Q,/'_' $5X2<057 +< ,@-!(:
M4 TN\"U)$SS@-3<P-[Q-0"/20* !D!$P+@6P"Z\K$?$`N\ #`! 0``````,`
M$1 `````P" $/____] ``<P8*SB;_<*P % ``@P8*SB;_<*P $+``" "" &
```

```
M``````# ````````1@`````#A0````````,``H (( 8``````, ```````!&
M`````!"%`````````P`%@ @@!@`````P ```````$8`````4H4``+<-```#
M``F "" &``````# ````````1@`````!A0```````!X`(H (( 8``````, `
M``````!&`````%2%```!````! ```#@N, `+`": "" &``````# ````````
M1@`````.A0````````,`)X (( 8``````, ```````!&`````!&%````````
M`P`I@ @@!@``````P ```````$8`````&(4````````>`#B "" &``````#
M````````1@`````VA0```0````$`````````'@`Y@ @@!@``````P ``````
M`$8`````-X4```$````!`````````!X`.H (( 8``````, ```````!&````
M`#B%```!`````0`````````>`#T``0````4```!213H@``````,`#33]-P``
"9MR%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

172. [wxsig] Re: Wx Phenomena

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sun, 20 Aug 2000 19:14:10 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103851-2000.08.20-19.21.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich Beckwith wrote:

> Now that I'm sending data to the APRS network with my T238 it has been fun
> looking at trends! http://www.findu.com/cgi-bin/wxpage.cgi?wn0x-3
>
> I noticed that many times in my location, the wind apparently starts in the
> east and gradually moves to the west througout the day. Kind of a diagonal
> stripe for each day. Is this typical Russ?
>
> Also, many wx stations on findu.com apparently show 0 degrees or "North"
> when there is no wind. I thought my station was broke, until I realized it
> was pointless to send wind direction with no wind!

Unless you're reporting the last detected wind direction...

> I guess we will need the humidty sensor to report Dew Point, is this
> correct?

FINDU can deal with RH -or- DP. I send RH... Steve can convert it based
on temp, BaroPsx and Humidity to Dew point... or t/p/dp to Humidity.
While the normal mechanism for conversion is a partial differential
equation, a couple of months ago, he solicited help to develop a table
for a faster look-up than a repeated calculation of the (possibly)
missing parameter.

> Barometric pressure shows very little variation on most of the stations I
> monitor. There appear to be slight daily changes and longer trends that
> take a few days to notice. Why do we send the data in Millibar format? Is
> that a standard?

We burned this cross on the APRS sig about 2 or 3 months ago... maybe
longer, I've slept since then. We could report it in InHg, kPa, hPa it
probably doesn't matter as long as we establish a reporting protocol
that maintains adequate, and consistent precision, and we're not
overreporting our accuracy. The standards I'm familiar with these days
are all listed above. Russ, as the expert can close this argument
(again, if memory serves).

> Will, can I log to my pc at the same time I am sending to the APRS network?
> I really like the stuff at findu.com, but there are holes in the data,
> probably due to APRS network inconsistencies or IGate problems. I would
> like to keep the data on hand myself.

At least with Linux/xastir, I can maintain a wx log and send it to the
'net. Can't speak for those other OS systems.

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

173. [wxsig] Re: Wx Phenomena

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sun, 20 Aug 2000 20:55:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103865-2000.08.20-22.01.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
Subject: [wxsig] Wx Phenomena

> Now that I'm sending data to the APRS network with my T238 it has been fun
> looking at trends! http://www.findu.com/cgi-bin/wxpage.cgi?wn0x-3
>
> I noticed that many times in my location, the wind apparently starts in
the
> east and gradually moves to the west througout the day. Kind of a
diagonal
> stripe for each day. Is this typical Russ?

"Typical" depends on the local situation. For example, near large bodies of water there is a sea breeze or lake breeze effect caused by the sun raising the temperature of the ground more than the water. This causes the air over the hotter land to rise which pulls air from over the water to replace it. This is a daily occurence at the sea shore. A similar thing happens in mountain valleys where the cold air sinks at night causing drainage flows down the valleys which reverse when the sun shines on the south facing slopes causing the wind to flow up the valleys. I'll bet that there is some local effect which causes the direction behavior you describe.

> Also, many wx stations on findu.com apparently show 0 degrees or "North"
> when there is no wind. I thought my station was broke, until I realized
it
> was pointless to send wind direction with no wind!

This is generally called "light and variable".

> I guess we will need the humidty sensor to report Dew Point, is this
> correct?

Yes, and Dallas Semiconductor has promised that we will get one of the beta 1-Wire humidity sensors for Will to experiment with and get interfaced to the T-238.

> Barometric pressure shows very little variation on most of the stations I
> monitor. There appear to be slight daily changes and longer trends that
> take a few days to notice. Why do we send the data in Millibar format?
Is
> that a standard?

The on-the-air APRS format uses millibars (corrected to sea level) for the barometric pressure. The various APRS programs can convert it and display it in any units, but on-the-air, it should be millibars.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

174. [wxsig] Re: Wx Phenomena

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sun, 20 Aug 2000 22:24:56 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103868-2000.08.20-22.31.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ Chadwick wrote:
>
> ----- Original Message -----

> From: Rich Beckwith <wn0x@earthlink.net>
> Subject: [wxsig] Wx Phenomena
...
> > Barometric pressure shows very little variation on most of the stations I
> > monitor. There appear to be slight daily changes and longer trends that
> > take a few days to notice. Why do we send the data in Millibar format?
> Is
> > that a standard?
>
> The on-the-air APRS format uses millibars (corrected to sea level) for the
> barometric pressure. The various APRS programs can convert it and display
> it in any units, but on-the-air, it should be millibars.

Do we hear a motion for femtopascals?

And yes, it's been that kinda week...

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

175. [wxsig] Re: Wx Phenomena

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sun, 20 Aug 2000 21:26:24 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103869-2000.08.20-22.32.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Subject: [wxsig] Re: Wx Phenomena

> Rich Beckwith wrote:
> > Barometric pressure shows very little variation on most of the stations
I
> > monitor. There appear to be slight daily changes and longer trends that
> > take a few days to notice. Why do we send the data in Millibar format?
Is
> > that a standard?
>
> We burned this cross on the APRS sig about 2 or 3 months ago... maybe
> longer, I've slept since then. We could report it in InHg, kPa, hPa it
> probably doesn't matter as long as we establish a reporting protocol
> that maintains adequate, and consistent precision, and we're not
> overreporting our accuracy. The standards I'm familiar with these days
> are all listed above. Russ, as the expert can close this argument
> (again, if memory serves).

I hesitate to classify myself as an expert, but I am sure that the
over-the-air convention for APRS is to send the barometric pressure in
millibars corrected to sea level. The APRS programs might display it in any
of a variety of units depending on what the user wants.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

176. [wxsig] Re: Wx Phenomena

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sun, 20 Aug 2000 23:24:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103875-2000.08.20-23.28.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks to everyone for the response on Wx phenomena. I live on a relatively
high plateau and can see for miles around my house when on the tower. No

trees (makes antenna farming difficult) near the house and no large bodies
of water. The Missouri river is to the north about 2 miles away. Don't
know why I was seeing the shift in direction.

Correct to sea level? So if my altitude is 830' then this is somehow
factored in?

The pressure sensor from Motorola I am working with reads from 15 to 115
KPa, and I convert it to "inches of mercury" and "millibar" based on some
formulas I found on the Net. Doesn't matter to me much. This "Land Lubber"
:) gets his Bp from the local news where it is always inches of mercury.

Russ, what is the proper way to notate "inches of mercury" and "millibars".
I have been using IHg and Mb for convenience when calculating pressure and
converting it. Do you have formulas your prefer for the conversion? Some
of the conversions to Inches Mercury I saw indicate I should be factoring in
temperature. I haven't noticed this factor on conversion to millibars,
which may be another reason to use Mb for a standard.

Regards,

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

177. [wxsig] Re: Wx Phenomena

From: "Joe B. Dorn" <joedorn@stonemedia.com>
Date: Mon, 21 Aug 2000 06:21:18 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103928-2000.08.21-06.39.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The easiest way to correct to sea level is to call a local airport, second
choice a TV station.

I down load the current NMS data directly into a program I use,' Digital
Atmosphere', and interpolate to my position. Millibars are pretty much the
standard reporting measurement because the plotting programs and the weather
service use this for their station models.

When you look at a weather station on APRS and the barometric pressure or
temperature is obviously off you tend to discredit any other info from that
station also. It indicates a sloppy or incomplete setup.

Joe Dorn, W5VEX, Belton, Texas

-----Original Message-----
From: bounce-wxsig-16324@lists.tapr.org
[mailto:bounce-wxsig-16324@lists.tapr.org]On Behalf Of Rich Beckwith
Sent: Sunday, August 20, 2000 11:24 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Wx Phenomena

Thanks to everyone for the response on Wx phenomena. I live on a relatively
high plateau and can see for miles around my house when on the tower. No
trees (makes antenna farming difficult) near the house and no large bodies
of water. The Missouri river is to the north about 2 miles away. Don't
know why I was seeing the shift in direction.

Correct to sea level? So if my altitude is 830' then this is somehow
factored in?

The pressure sensor from Motorola I am working with reads from 15 to 115
KPa, and I convert it to "inches of mercury" and "millibar" based on some
formulas I found on the Net. Doesn't matter to me much. This "Land Lubber"
:) gets his Bp from the local news where it is always inches of mercury.

Russ, what is the proper way to notate "inches of mercury" and "millibars".
I have been using IHg and Mb for convenience when calculating pressure and
converting it. Do you have formulas your prefer for the conversion? Some
of the conversions to Inches Mercury I saw indicate I should be factoring in
temperature. I haven't noticed this factor on conversion to millibars,
which may be another reason to use Mb for a standard.

Regards,

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: joedorn@stonemedia.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

178. [wxsig] Re: Wx Phenomena

From: Red <RedHaines@centurytel.net>
Date: Mon, 21 Aug 2000 08:35:43 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-103944-2000.08.21-08.41.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello to all;

Correcting your barometric pressure to sea level is approximated (useful for a couple thousand feet elevation) by adding 1" (35.86 mB) per thousand feet above sea level. For example: pressure of 28.92" Hg (979 mB) at 1000 feet mean sea level equals 29.92" Hg (1013 mB) at sea level.

This is useful if you know your pressure measurement is accurate. The best is to calibrate your barometer to a local airport; airport readings meet high standards of accuracy. There will be an error proportional to distance to that airport and any difference in time. Check when the wind is near calm (calm wind implies little pressure differential per mile) and soon after the airport reading is recorded (usually shortly before the hour if reported manually, more frequently if recorded automatically) to minimize the error.

You can call the flight service station (FSS) serving you on 800 992 7433 and ask for the latest weather at any airport. In addition, weather at many airports is broadcast on the automatic terminal information service (ATIS) serving tower controlled airports and on AWOS or ASOS frequencies from many non-controlled airports. These frequencies, between 108.000 and 135.975 MHz, are listed on aviation charts, which you can find at the airports.

Hope this helps all hams report accurate information; as someone mentioned earlier, inaccurate information discredits the reporting station operator and hams in general.

73 de WOØW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

179. [wxsig] Re: Wx Phenomena

From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 21 Aug 2000 21:13:24 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-104119-2000.08.21-22.22.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
Subject: [wxsig] Re: Wx Phenomena

> Russ, what is the proper way to notate "inches of mercury" and
"millibars".
> I have been using IHg and Mb for convenience when calculating pressure and
> converting it. Do you have formulas your prefer for the conversion? Some
> of the conversions to Inches Mercury I saw indicate I should be factoring
in
> temperature. I haven't noticed this factor on conversion to millibars,
> which may be another reason to use Mb for a standard.

Since 29.92 inches of Mercury (inHg) is the same as 1013 millibars (mb) then the conversion between the two is

```
mb  =  (1013/29.92) * inHg

Temperature comes in when you are converting from station pressure (what the
transducer measures) to sea level pressure.  If you don't have all pressures
at the same level then the pressure map will tell you more about the
topography than about the atmosphere, i.e. the topography will add
undesirable "noise".  One way to convert between station pressure and sea
level pressure is to use these equations:

 Tm = (temperature_current + temperature_12_hrs_ago) / 2

 STATION PRESSURE = SLP/(b+c*Tm+d*Tm**2)

 SLP = STAPRS * (b+c*Tm+d*Tm**2)
 SLP = STAPRS * b + STAPRS * c*Tm + STAPRS * d*Tm**2

The constants b, c, and d depend on station altitude and on latitude in a
non-trival way.  Also, note that if you don't have a good temperature
measurement, you may not have a good sea level pressure value.  Therefore,
it's generally better to reference your sea level pressurement to a nearby
location that is at nearly the same altitude.  Examples might be your local
TV station or airport.  The two recent postings by Joe and Red give good
information on how to do this.

Russ
kb0tvj



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

180. [wxsig] RE: t-238

```
From: William Beals <will@beals5.com>
Date: Mon, 21 Aug 2000 21:17:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "'wxsig (TAPR)'" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-104121-2000.08.21-22.44.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
McCoy:

This is good stuff for the reflector, so I'm posting there as well.

1) I will need to look into the checkout procedure for the 1-Wire bus
connector.  I had trouble with that, but think that I got it to work per
the instructions when I tried them out.  I had to guess which side was pin
1 and with hindsight that should have triggered a flag to make it clear.

2) One of the known development problems I've had is testing the T238 with
other TNCs.  All I have are a pair of identical Kantronics KPC3+'s.  The
fact that the T238 does not work with a PK232MBX is not a huge surprize.
 The idea is that the T238 sends out the following sequence of commands
^C
echo off
monitor off
convers

This sequence first makes sure the TNC is in command mode, turns some stuff
off and then enters unconnected conversation mode.  The UNPROTO command
must be set by the user to tell the TNC where to send unconnected packets.
 (BTW, all the above is explained in the operations manual)  All the above
is based on my understanding of the KPC units and assuming that most TNCs
operate with a similar basic set of commands.  If the above does not work
with the PK232MBX, then I will need a special sequence for that TNC and
will need someone (hint, hint) who has one to tell me what it should be.

will


-----Original Message-----
From:   McCoy Phillips [SMTP:mphill@tsixroads.com]
Sent:   Sunday, August 20, 2000 8:10 PM
To:     William Beals
Subject:        Re: t-238
```

OK,let me see if I can be precise enough to tell you what I think I mean.

In the assembly manual, page 7, right hand column, in the first table down
the column you call for +5v on pins 2 & 3 of J2. I found the +5v on pins 2
&
4 of J2.

Got the new software downloaded and installed,,,,,,the install routine
worked like a charm. Got my cordinates entered, but the T238 doesn't config
the TNC, that it it doesn't leave the TNC in convs mode. I'm using the
first
option "5-min avg (TNC-dir)" with an AEA PK 232MBX. After running the
config
routine, the TNC goes into baudot mode. Got any suggestions,,is the old PK
232 ready for the rest home?

Thanks--McCoy

----- Original Message -----
From: William Beals <will@beals5.com>
To: 'McCoy Phillips' <mphill@tsixroads.com>
Sent: Sunday, August 20, 2000 5:50 PM
Subject: RE: t-238

> McCoy:
>
> The manuals on the website are for the NEW software, version 1.10.0. The
> kits shipped with an older version of the firmware that did not contain
the
> position string support. On the downloads page of the website is the
> latest software, downloader, and instructions on how to upgrade. MAKE
SURE
> YOU FOLLOW THE BIT ABOUT BEING IN "PURE" DOS MODE, not a DOS window.
>
> Thanks for the kind words on the kit. I am not sure what you are talking
> about on the pin position error though, please elaborate.
>
> will
>
> -----Original Message-----
> From: McCoy Phillips [SMTP:mphill@tsixroads.com]
> Sent: Sunday, August 20, 2000 2:38 PM
> To: will@beals5.com
> Subject: t-238
>
>
> Hi Will,
> I just recently received the T-238 from Tapr. I now have the kit
assembled.
> It is working fine with output to the LCD. However, I can find no way of
> setting up my position as I want to put the wx station on APRS system. I
> can scroll thru all the menu choices listed in the operating manual
except
> "POSITION STRING SETUP". It's like this last menu option does mot exist.
> Any ideas on what I'm doing wrong?
>
> The kit was really pro work and the put-together instructions were right
on
> except for a pin position error at the RJ-45 jack, which I expect you
> already know about.
>
> Thanks--McCoy--N5YAV
>
> << File: ATT00001.html >>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

181. [wxsig] RE: KPC3+ & T238

From: William Beals <will@beals5.com>
Date: Tue, 22 Aug 2000 21:01:35 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "'wxsig (TAPR)'" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-104394-2000.08.22-22.10.34--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Mike:

Glad the T238 is working. I have been too cheap to upgrade to the 8.3 firmware but probably should. I put in the feature at the request of someone (forgot who) on the reflector and they said it worked fine. Unfortunately, I'm running blind on this one. I'm copying your question to the reflector so that I can get an answer and put it in the next rev of the operations manual.

Cool way of powering the TNC and T238 with one transformer. The fewer of those the better.

will

-----Original Message-----
From: Michael Barelli "WOMAF [SMTP:barelmic@yahoo.com]
Sent: Tuesday, August 22, 2000 9:59 AM
To: will@beals5.com
Subject: KPC3+ & T238

I am using the T238 (Great Kit) with an KPC3+. I just upgraded to Rev 8.3 ($59.00) so that I can use WinAPRS at the same time. I am not getting something. The T238 does not talk to the KPC3+ . This stuff is very confusing to me and perhaps some of the others could use a little help with the settings, baud rate and such.

By the way I am powering the TNC with the T238 by putting two jumpers from the Power jack to the DB9 to pin 7 and Ground to pin 5. I then played with the jumpers in the TNC J2,J6 & J7. I am planning on putting the T238 and the TNC in the same box.

Mike W0MAF

Michael Barelli WOMAF

Do You Yahoo!?
Yahoo! Mail - Free email you can access from anywhere! << File: ATT00000.html >>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

182. [wxsig] Wind vane yellowing

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Wed, 23 Aug 2000 11:01:39 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-104537-2000.08.23-11.08.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

To group: I was able to get one of the last few systems from Dallas Semi back in late June. I put it up about a month ago. I have noticed the wind vane is turning yellow in the hot central Texas sun. I removed all the Dallas stickers prior to installation because I was sure they would yellow real fast. The rest of the module is still white. Has anyone else seen this?
Please note that this is an extreme case as the unit is in 100% sun @100 degrees F and we have not had a cloud go by since I installed it. The dust gage looks good also...Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

183. [wxsig] Re: Wind vane yellowing

From: Gregory Beat <gregory.beat@mediaone.net>
Date: Wed, 23 Aug 2000 11:54:49 -0500

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-104552-2000.08.23-12.08.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill -

That does happen with some plastics in UV light. You may have found that
the wind vane is this type of plastic. Someone on the reflector may be
aware of an after market product (clear lacquer?) that could be sprayed on
to protect from UV yellowing.

G. Beat

Bill Ellis wrote:

> To group: I was able to get one of the last few systems from Dallas Semi
> back in late June. I put it up about a month ago. I have noticed the
> wind vane is turning yellow in the hot central Texas sun. I removed all
> the Dallas stickers prior to installation because I was sure they would
> yellow real fast. The rest of the module is still white. Has anyone else
> seen this?
> Please note that this is an extreme case as the unit is in 100% sun @100
> degrees F and we have not had a cloud go by since I installed it. The
> dust gage looks good also...Bill N5ZTW
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

184. [wxsig] Re: Wind vane yellowing

From: William Beals <will@beals5.com>
Date: Fri, 25 Aug 2000 08:14:05 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105014-2000.08.25-09.22.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I checked my weather unit out and it seems to look fine. I also took the
stickers off in an attempt to make it look more plain. It has been outside
here in Colorado which has probably also seen only 2-3 cloudy days but
otherwise blistering heat and sunshine. The TWI folk claim that they used
UV-resistent plastic and such when touting the quality of the unit, but
then again, they are a biased source of data! My two units are holding up
well, Russ isn't so lucky unfortunately.

will

-----Original Message-----
From: Gregory Beat [SMTP:gregory.beat@mediaone.net]
Sent: Wednesday, August 23, 2000 10:55 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Wind vane yellowing

Bill -

That does happen with some plastics in UV light. You may have found that
the wind vane is this type of plastic. Someone on the reflector may be
aware of an after market product (clear lacquer?) that could be sprayed on
to protect from UV yellowing.

G. Beat

Bill Ellis wrote:

> To group: I was able to get one of the last few systems from Dallas Semi
> back in late June. I put it up about a month ago. I have noticed the
> wind vane is turning yellow in the hot central Texas sun. I removed all
> the Dallas stickers prior to installation because I was sure they would
> yellow real fast. The rest of the module is still white. Has anyone else
> seen this?
> Please note that this is an extreme case as the unit is in 100% sun @100
> degrees F and we have not had a cloud go by since I installed it. The
> dust gage looks good also...Bill N5ZTW

>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@X.`0:0" `$``````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (```+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`D````4D4Z(%MW>'-I
M9UT@4F4Z(%=I;F0@=F%N92!Y96QL;W=I;F<`8@P!!8 #``X```#0!P@`&0`(
M``X`!0`%`!@!`2" `P`.````T <(`!D`" `)``,`!0`1`0$)@ $`(0```#0U
M,C=!,3-$-30W040T,3%!.#4V,# P,$4X.4(S0S Y`/$&`0.0!@!4"0``(0``
M``L``@`!`````"P`C```````#`"8```````L`*0```````P`N```````#`#8`
M`````$ `.0#@-#^ZG@[ `1X`< `!````) ```%)%.B!;=WAS:6==(%)E.B!7
M:6YD('9A;F4@>65L;&]W:6YG``(!<0`!````%@`````' #IZZ-CVA)T9Z5!'4
MJ%8``.B;/ D``!X`'@P!````!0```%--5% `````'@`?# $````0````=VEL
M;$!B96%L<S4N8V]M``,`!A#"9/8=`P`'$+,%```>``@0`0```&4```!&3TQ+
M4SI)0TA%0TM%1$U95T5!5$A%4E5.251/551!3D1)5%-%14U35$],3T]+1DE.
M14E!3%-/5$]/2U1(15-424-+15)33T9&24Y!3D%45$5-4%143TU!2T5)5$Q/
M3TM-3U)%``````(!"1 !````- 8``# &``!/"0``3%I&==:6*6H_``H!`P'W
M`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+
M`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V! ;F<Q,#,S"Z8@XD8&\&MS.@JB
M"H0*@"Q)( ]@!9!K"8 @;<!Y('=E87080 7 _G4#``5 "& %0 !P&) 9@8D/
MH&5M!"!T;R )`!!O:R!F"X!E+B#V(!@0!T!S&M :P!L1&1'Y&E!T:1AA#Y 9
MH $@&B#W`Z #D1D`=!J !3$:P0# WQAP&B(:\P1@"7 @"U,;@O<%0 ]P!"!B
M">$9H@"0`0`_(% $D![!`Z (4 D!861I&M!W:!S0:"!3$3!O>F(!H&P8P!O3
M&F$@T6XQ(X$R+3,8( D`=62Q&,!D87D@@1G!;QD2_P/Q') "8 0``'@`%$!8`
M(6%K&0`9XW,98',BD!MC5/D<@517&! "$!<0)-$+<-YM'&$G41D1&,!U#Z 8
MD/A55BT)< "0)K$",!^B_QRR)W4BL2* (,$:P!G )O+Y'')Q=0= &8 8P!U
M'&/=&6(L)9,9$1V19PMQ+K#W*?,*P!R082"0!S J4AOPO0AP8QR0+@$E4 &0
M(1N0\DT8P'1W&M 98@0@,")*: ;P9";R=7 8T6PZ;"ZP4BI !" $`&XGUQI!
M&M$5$&LJ(6X"$ `@YQE@&0`ST'DN%UH#\#/@YQ=:"O0FD#,V`4 5H % $R,A
M'@!C=!!T,38@ZBTZ`D\%$&<+@ = !=#U!Y!S+V!E.@,75CD4..&#"Q,Y%FDM
M,30T`4!Q)I Q.# !0 S0/:-BKQ;@`V$70 R28@_01PEP%F<%L!C 0B="6U--
MV%10.@G!/_(N(* 9``9 !X S0&$"(!MP&V!TOET753[0!F ",#\W5PF C1M@
M<R51+K!!=6<J0+D%0#(S+K !T#XP(!8@ECH4``_@34*75&\_-U!405!20^!8
M!@!P_P60!S$;H (P(8%$X3_ "&!B<$*8=6)J.4$_-ULD=W@`D&==!_!E.K-#
MX!3!('8`<!R0>3/1_F\#\!8`.Z\\NCAD"[878_L*XPJ 0C<1.? 76BAP)U'W
M(E 'D0]P<$?P`Z #\!D0_S#A!X K5C11`Z JD!K@.G#D:'0;@2!9"& >@1C
M_0]P=AR0`A 98!B0*:(75+\<<DR!2\4$`!QA5S)Y1_#W+?(K91N!4U+!0A$D
M01QC^0EP9FPY006Q5,(@H!=4_&%W,"(N`1VR`8 9,0# ;G(8<"M!`V!D%1 %
M0"AO). 8\ 7 "V!C+8 $D#_V*2F4!:!U,S @D1I0$3#_)6 8@0(@5?4:T#D%
M&S #8?=3LDPW-CM'&X! 0A=:4#.V13/@5S%W.1(72SY&H?X@"<!)$4MP&!!;
M,#*Q`F#_') :P3LP&9%9(BX4*W(;,+T'T7,E<!X!!"!@TT0'0/LK<091;0"@
M964C4!A@'7)S"V >`"!*&6 ;<1@0</\9P1F!,Y$!H!FS'U$","+ [2]@;VOB
M50-N)> <T!B!_QD19596G AP`P`G`4PT'7(_''(S$%YQ*R$B, ,@5&7^>"!Q
M)\%KX@EP!&!5(!B0OVFQ958<<FFE'+<1,&D%L7\:P0N '+!ILAS 65$@H&/^
M82I!9F4GP!^!*?,R0%ZQ[V56<.4)<#JQ9BN!&X H<O](HRX%!&%>L%<3'+%0
M42*!RQX`&X!(9J)N>5D2,]"O#Z!E5B0#5V(_959075'_)E%N87@R*<-7,5<Q
M`Y%RD/]R,!J ')!W0"91('$N-E<BDQV!%B P)2>R($"#0>]E5@$`"<($($89
MXQC@;@??(%%SL2349? :T&(8P "0_FXQ,1@0=E48@1F >G.$%_]$TB]P.S :
MXP0@/_ $<!O#QBZ*\% S3C5:*+!E5=]E5CMW9;!4@C B8PAP"7#W`C C@2?
M8@3R(*!5D2)A_TKR@A%+<$#_0@9E62?1CI;_&E$:`3!A%>$;(!J "W #(#<:
MPACP52 M2N,]D#4WD# W34 FDG,N`9#]$3 N!;!,MQ=X.W>-;XY_S8^&=P;0
M>?%S0 6@'B#U*D%R52 NFT%0]9(ODS\OE$^57Y9K$?$`H> #`! 0``````,`
M$1 ``````P" $/____] ``<PX '<!9X.P % ``@PX '<!9X.P $+``" "" &
M``````# ````````1@`````#A0```````,``H (( 8``````, ```````!&
M`````!"%`````````P`%@ @@!@`````P ```````$8`````4H4``+<-```#
M``F "" &``````# ````````1@`````!A0```````!X`(H (( 8``````, `
M``````!&`````%2%```!````! ```#@N, `+`": "" &``````# ````````
M1@`````.A0````````,`)X (( 8``````, ```````!&`````!&%````````
M`P`I@ @@!@`````P ```````$8`````&(4`````````>`#B "" &``````#
M`````````1@`````VA0```0````$`````````'@`Y@ @@!@`````P ``````
M`$8`````-X4```$````!`````````!X`.H (( 8``````, ```````!&````
```

```
M`#B%```!`````0`````````>`#T``0````4```!213H@``````,`#33]-P``
"IH"%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

185. [wxsig] Re: Wind vane yellowing

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Fri, 25 Aug 2000 09:29:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105022-2000.08.25-09.33.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mine is yellowing too. Kind of odd, the rest of the unit is just fine. Mine was one of the last units from DalSemi.

>>> will@beals5.com 08/25/00 09:14AM >>>
Folks:

I checked my weather unit out and it seems to look fine. I also took the stickers off in an attempt to make it look more plain. It has been outside here in Colorado which has probably also seen only 2-3 cloudy days but otherwise blistering heat and sunshine. The TWI folk claim that they used UV-resistent plastic and such when touting the quality of the unit, but then again, they are a biased source of data! My two units are holding up well, Russ isn't so lucky unfortunately.

will

-----Original Message-----
From: Gregory Beat [SMTP:gregory.beat@mediaone.net]
Sent: Wednesday, August 23, 2000 10:55 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Wind vane yellowing

Bill -

That does happen with some plastics in UV light.   You may have found that the wind vane is this type of plastic. Someone on the reflector may be aware of an after market product (clear lacquer?) that could be sprayed on to protect from UV yellowing.

G. Beat

Bill Ellis wrote:

> To group: I was able to get one of the last few systems from Dallas Semi
> back in late June. I put it up about a month ago. I have noticed the
> wind vane is turning yellow in the hot central Texas sun. I removed all
> the Dallas stickers prior to installation because I was sure they would
> yellow real fast. The rest of the module is still white. Has anyone else
> seen this?
> Please note that this is an extreme case as the unit is in 100% sun @100
> degrees F and we have not had a cloud go by since I installed it. The
> dust gage looks good also...Bill N5ZTW
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

186. [wxsig] Help. T238 not reporting

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Fri, 25 Aug 2000 12:24:42 -0500

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105100-2000.08.25-12.28.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is anyone having problems with intermittent reporting of data? It seems I haven't been reporting data for about 24 hours, but the machine still hums and I show it sending data every 60 counts. The only thing I did was to press the "select" button on my T238 and move it through the menus about 24 hours ago, but left it running. Any ideas Will? is there a way I can help trouble shoot this if it is a problem?

A fellow T238 builder called to ask why I wasn't reporting the 3/4 of rain we received last night. I know the amount is displayed on the T238, but it must not be making it to the TNC?

Regard,

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

187. [wxsig] Re: LCD Availibility UPDATE

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Fri, 25 Aug 2000 12:47:13 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105105-2000.08.25-12.54.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks Doug! I purchased two of these $7.00 displays and they work great
in the project! All Electronics seems to have a bunch in stock also.
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

188. [wxsig] RE: Help. T238 not reporting

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 25 Aug 2000 17:59:19 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105122-2000.08.25-17.06.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

check FINDU's raw data for your station and see just what is getting
there. If you don't know how to do that go to my APRS Query page and
there is a 'form' for that down the bottom of that page

    <http://www.wulfden.org/APRSQuery.shtml>

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Rich Beckwith
> Sent: Friday, August 25, 2000 1:25 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Help. T238 not reporting
>
>
> Is anyone having problems with intermittent reporting of
> data? It seems I haven't been reporting data for about 24
> hours, but the machine still hums and I show it sending data
> every 60 counts. The only thing I did was to press the
> "select" button on my T238 and move it through the menus
> about 24 hours ago, but left it running. Any ideas Will? is
> there a way I can help trouble shoot this if it is a problem?
>
> A fellow T238 builder called to ask why I wasn't reporting
> the 3/4 of rain we received last night. I know the amount is
> displayed on the T238, but it must not be making it to the TNC?
>
> Regard,
>
> Rich Beckwith Wn0x
>
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

189. [wxsig] Re: Help. T238 not reporting

From: "Russ Chadwick" <crb5@uswest.net>
Date: Fri, 25 Aug 2000 17:21:42 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105131-2000.08.25-18.28.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <Rich@dps.state.mo.us>
Subject: [wxsig] Help. T238 not reporting

Is anyone having problems with intermittent reporting of data? It seems I haven't been reporting data for about 24 hours, but the machine still hums and I show it sending data every 60 counts. The only thing I did was to press the "select" button on my T238 and move it through the menus about 24 hours ago, but left it running.

You don't move through the menus with the select button, you move through the display screens. You move through the menus with the menu button. Which did you do?

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

190. [wxsig] RE: Help. T238 not reporting

From: William Beals <will@beals5.com>
Date: Fri, 25 Aug 2000 19:54:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105164-2000.08.25-21.01.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

A couple of suggestions:

1) For a while I had a problem where the TNC would go out of conversation mode for reasons unknown. When this happened I would essentially quit sending data as my weather data was being interpreted as bad commands. A quick way to check this is to see if your TNC transmit LED (or radio transmit indicator for that matter) goes off when the sample count cycles from 59 back to zero. If the transmit indicator doesn't light, that would suggest a problem between the T238 and TNC. As a debug step, plug in your computer and hit the carraige return. If you get a command response, you dropped into command mode for some reason. I had this problem in spades with my wire-wrapped prototype, but the problem has completely disappeared with my PCB. I suspect it was dirty power.

2) Our igate and a few digipeaters do sometimes have trouble here in Denver, so one other way I've been able to get some support data when my igate data goes away is to ask a local APRS-er if he sees my data. Russ (about 60 miles away) is great at telling me my packets are still OK even though I may not be getting to the igate.

3) You can hopefully also hook up your computer to your T238 to see if it is putting out data at the correct baud rate and without error.

4) Then all the standard boring stuff like intermittent cable connections on serial and power cables, power voltages, etc.

To Russes point: Although not initially intentional, the way the firmware is now, if there is actual weather data (or related data like error counts) on the screen, you should be broadcasting data. Any other screens like setup, diags, etc, you will not be broadcasting data.

Please lemme (and the reflector) know what you find.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Friday, August 25, 2000 11:25 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Help. T238 not reporting

Is anyone having problems with intermittent reporting of data? It seems I haven't been reporting data for about 24 hours, but the machine still hums and I show it sending data every 60 counts. The only thing I did was to press the "select" button on my T238 and move it through the menus about 24 hours ago, but left it running. Any ideas Will? is there a way I can help trouble shoot this if it is a problem?

A fellow T238 builder called to ask why I wasn't reporting the 3/4 of rain we received last night. I know the amount is displayed on the T238, but it must not be making it to the TNC?

Regard,

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@`!`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, 0````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?`````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P````#`/U?`0``
M``,`_U\``````@'V#P$````$````````!&5D`02 `0`F````4D4Z(%MW>'-I
M9UT@2&5L<"X@(%0R,S@@;F]T(')E<&]R=&EN9P!.# $%@ ,`#@```- '" `9
M`!,`-@`:``4`8 $!(( #``X```#0!P@`&0`3`#8`&@`%`& !`0F `0`A````
M-C8W-41"14-"1#=!1#0Q,4$X-38P,# P13@Y0C-#,#D`.0<!`Y &`& +```A
M````"P`"``$````+`",````````,`)@``````"P`I```````#`"X````````,`
M-@``````0 `Y`"#?=I `#\ !'@!P``$````F````4D4Z(%MW>'-I9UT@2&5L
M<"X@(%0R,S@@;F]T(')E<&]R=&EN9P````(!<0`!````%@`````' #P`/WNS;
M=6=ZO1'4J%8``.B;/ D``!X``@P!````!0```%--5% ``````'@`?# $````0
M````=VEL;$!B96%L<S4N8V]M``,`!A KHY!V`P`'$'4(```>``@0`0```&4`
M``!224-(.D%#3U503$5/1E-51T=%4U1)3TY3.C$I1D]205=(24Q%24A!1$%0
M4D]"3$5-5TA%4D542$543D-73U5,1$=/3U543T9#3TY615)3051)3TY-3T1%
M1D]24D5!4T].4U5.``````(!"1 !`````.P@``#<(``"?# ``3%I&=6,<82<#
M``H`<F-P9S$R-3XR`/0!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#Z9P<G$R
M$*9]LPJ ",@@.PEO#C U`H E"H%V")!W:PN 9#1M#&!C`% +`V,`00M@;G$.
M$# S,PNF!_ -X&A..@JB"H0*@$$@!:!U`0M092!O9B!S=:1G9P>0=&D"(',7
M^Q Q*2!&!;%A('>F: ,0&3!)(! P9!MAY1'P;P)@96T;@020&3#"=!T`(%1.
M0QN "&#2;!PP9V\90'4%0!E1206@;G8$D'-A&>(@G01B( (0!< )<&%S&@$`
M('5N:VYO=V[P+B @5QT``Z =4 0`^1P!<' )\ F &^$=U >0!Q!@`C ',6QY
M('%U%FD%0",A9 N 9R!DWQ] &W @4!^0(Z!W($ =4<L%P"23=R3A8F4D4@N
M_G0$D!'P$' B428B'"$%H')M`X%D<R$A&, CP6/V:R8!(Z!T'D 0( 60*/ _
M(:,AP2E1$& 9, :0('E3"&$=@W1R`'%M(^%,\$5$("@@`AP@&? KB/\5@0W@
M'T %L1_R'5 ?0!^0_Q] )M$;$!XP!Y$94!E@'/'W(8(9,!\P;1D2&.$",!C0
M''EC&2 $( -2(#4Y5R>1*;(>0'H$D&\A(4F?&6 =4BT/):$O46XG!4# ;&EG
M:'0L+F0=U#<9A1Q))E!T)4 O]50R_#,X&V 5D!V"*&($(!MPW0$`8AF0&7 F
MT' U@ M0[SFA"X J]"?A<!YP)9$X@N\;H 5 '5(MT'(KH#5 &3#_)Q$(<"$2
M,Q$K`1X@$' ;8=,GY2 A<W :`64U@#VB_F0#8"(1'# FL2EA/E4?I_\@8 >
M("4RXAP#(:,<=CJ!OS[@'" 'D0/P'5 E`VD)<#PM=RN@/],<<2E0='G_(B U
M@#F0._0<=A P!" [`O\9(";0(Y$D0!\P(A$*P")1\40V4$-"0C,9@#[@!9#_
M+7$UT23A)$ `(".@/O E0-1R+A@*,AL03RLA-4!O'T 9,#B"&W!F!]$D0&?_
M!2 E41\1-*%!<QG@!X(0,'\?`"N!"& <H1P``1(Z@43_"? ?`36 (& 90")
M&4 E<_DI$DDG3W$F4"%Q`: 9(?\I43WB08,9@"(0"1$EM2%B[R413,0DDR]#
M82D2*C0@4!\H\!MP"0`MT ,@05!2_%,M)9$JT3 R"> D\R22;2$A4DGP!" H
M`: >8C;_$) KX#%B5C(;$"'!"<$ND?\ND4?1-3 D84&A)1$*L"C@OQ!P.3$=
M(1G1(X!,<$LB\/\?`"&""& U4!OA`, CH"#@_P5 )E ]TAG@)&$I41U23,/U
```

```
M2XLS&Q!9/;$MT .@7G!](B!F'? CD0= 42%><&__*/ 9`#JM*5$K!#A"*F@M
M8O]"\1YP7],>8B24._4%L EP^THQ)Z!U/J%,YD0R'F($D.L#8$M\-!L05"%B
M(W$P%'\!D!60"Q$F0 6P)%(9T'7_+Z$U,%SP)J0KX2;0,0)2T_\>T2) 2C 9
M\E%!) $'(CASVTLS;G1S.A%PDW8&\ &0UQFQ-8 0<&-+BU0>0%ER]P>1/O F
ML3HH<7'@7G1?,O\+@"/@(V0FLB-!`B '0#6"UQDP*1,=869$P&TF$%!"_P0@
M(.$U@"K1)7)W\P#0/0#_5W$E2RQC1^!,X1PP))-M8_MIXS#$<QL0'W$P(P4`
M">'=/T1S7G$>`5]Q8@-@'"#O+= 9T21E*&)N(Z!1E'U$_P0@;6,081D`-8 D
M0'(`<C2_/T0#\%VQ7S5^KTN+4!D@_R!0&3 <L4&A6< XD1U2"7#^9AD@2C %
ML!L0(-(;@2Z1_SVB=X 5D$N+@L(8"@KT-3!^,UHP%E$!0$6"2B$1-#'H-B M
MC&)/!1!-X'9Q_P70(P%R`8QC& :+=(M!"Q/!BW9I+3$T- % -3"X,3@P`4 ,
MT) #8AL@EP-A%_ ,DF(7E"!"*:&!1#-;4TU44#H7LGA 9' H4&P!8,$$8"[]
M2?!=& 61, 9@=#&1II%0ZFDDD'DU@$$9D$GP!4 /#C U@ '0D) @,3$ZNPXP
M$*!-E+=S8)&75%>AW2% 6 8`2A%P`DDFPC:2VD=/L7"4N$_0:DHAD9<(6W=X
M`)!G72!(_4?@<"$A.#-?,@EP5!(D47^.#X\:BL0+MA@3"N,*@$G_.3%_\%%2
M3U$D4AQU1!5MN_>>1QE"))(_,O$C\J.B&_)_7B$U`5*#I0@DDQ_R6=0R_C1B
M40AP<3%&-@#!&Z!18?E=A&AUH[$X@DG!7G 'X/LC[EX1<B.@6C%\5)V"'6'_
M`B CD2&A)&$;\"1 2,$DX6\I42<!!!$=4B(08(;R(O]&(BE0`Z ?<B.@.#<$
M8$]Q_SOC3[%>H:HS"?!)\*CM&V#?'C!&%!D@`8!*4G(@L ,`_Q; ?[66,"!!
M(4!=H:81*C+_'0,E\E(18A2=44^7?@%?0?\IY&8&'%>F$!@,38 C@(>1_S@S
M.9 #$ 2!/$$C@")15K4_&Y"XXB81-/*E"!U2,R^_J6 943R!`Z E0" A8R9@
M_Q\`'# +8#:A`P`U44(SAW._'5(P<##C(<%((0M1>2)1[WS5.#)&%"/A;9;"
M7S4`P%\5<2:1._%@-!V1/Q@*4K9E3- +("S(:Y([5PH`OGB)K@J C==AXEU"
M8PAP[PEP`C CD1F 8@3R)E"^DW><TR31=%!W!M @0&,00/<[`V_1'P`N)^%S
M!R"PSD?_) ,;80)@`' H\!S "W!KH3\>0(5Q'P!$\)SBC_ U-_ P-TU -3 9
MT"A0`9"]$? N!;">QQ@B$K$`UN ``P`0$ `````#`!$0``````,`@!#_____
M0 ``, "^?_?^#L !0 `("#?=I `#\ !"P``@ @@!@``````P ```````$8`
M`````X4````````#``* "" &`````# ````````1@`````0A0````````,`
M!8 (( 8``````, ```````!&`````%*%``"W#0```P`)@ @@!@``````P ``
M`````$8``````84````````>`"* "" &`````# ````````1@````!4A0``
M`0````0````X+C `"P`F@ @@!@``````P ```````$8`````#H4````````#
M`"> "" &`````# ````````1@`````1A0````````,`*8 (( 8``````, `
M``````!&`````!B%`````````'@`X@ @@!@``````P ```````$8`````-H4`
M``$````!`````````!X`.8 (( 8``````, ```````!&`````#>%```!````
M`0`````````>`#J "" &`````# ````````1@`````XA0```0````$``````
A`````'@`]``$````%````4D4Z( `````#``TT_3<```D[
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

191. [wxsig] RE: Help. T238 not reporting

From: David Norris <dave@webaugur.com>
Date: Sat, 26 Aug 2000 02:55:37 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105206-2000.08.26-03.02.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
> 1) For a while I had a problem where the TNC would go
> out of conversation mode for reasons unknown.
> When this happened I would essentially quit sending data as
> my weather data was being interpreted as bad commands.

I have reliably had this problem with my AEA PK-232. In my case it is
being caused by EMP. I can drop it to command mode by touching
something grounded nearby while the humidity is low. What's worse is
that the TNC drops to command mode whenever I have a lightning strike
within a few miles. (Great for weather reporting...)

I have not found any way to fix it, though. I've tried grounding,
isolating from ground, isolating from mains, etc. It is powered by an
APC Smart UPS and a regulated 12VDC 20A supply (ultra stable power
source). I just work around it by manually reseting my software. I
have considered sending ^C\nK\n prior to transmitting data. Maybe
that's an option for the T238.

It would be interesting to see if this may be something similar.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

"I would never belong to a club that would have me as a member!"

- Groucho Marx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

192. [wxsig] Up and working

From: calfano <calfano@worldnet.att.net>
Date: Sat, 26 Aug 2000 06:19:03 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105212-2000.08.26-05.26.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

To all,

Finished my T238 Wednesday and every thing worked great. The crew did a fine job of designing the unit .
Now I have a question for the masses. I'm running a KPC9612+12 as a digi and gate.
The work station is attached to the TNC comport and the WX unit is installed on port 7 of the PC. Therefore as long as the pc is up the wx data is transmitted. My question is should I build a HSP port for the TNC so I can kill the PC?

73
Charlie
WA2GUG
--
ned!
[Attachment: calfano.vcf; text/x-vcard; 184 bytes]

193. [wxsig] RE: Help. T238 not reporting

From: William Beals <will@beals5.com>
Date: Sat, 26 Aug 2000 18:36:08 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105305-2000.08.26-19.37.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

David:

Those kinds of problems are nasty. Any luck trying ferrites (prayer beads I'm told someone calls them!)

will

I have reliably had this problem with my AEA PK-232. In my case it is being caused by EMP. I can drop it to command mode by touching something grounded nearby while the humidity is low. What's worse is that the TNC drops to command mode whenever I have a lightning strike within a few miles. (Great for weather reporting...)

I have not found any way to fix it, though. I've tried grounding, isolating from ground, isolating from mains, etc. It is powered by an APC Smart UPS and a regulated 12VDC 20A supply (ultra stable power source). I just work around it by manually reseting my software. I have considered sending ^C\nK\n prior to transmitting data. Maybe that's an option for the T238.

It would be interesting to see if this may be something similar.

```
begin 600 WINMAIL.DAT
M>)\^(AD``0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`J````4D4Z(%MW>'-I
M9UT@4D4Z($AE;' N("!4,C,X(&YO="!R97!O<G1I;F<`/PT!!8 #``X```#0
M!P@`&@`2`"0`" `&`#T!`2" `P`.````T <(`!H`$@`C``T`!@!!`0$)@ $`
M(0```$$X-3 W045!-T0W0D0T,3%!.#4V,# P,$4X.4(S0S Y`"4''0.0!@"0
M!@``(0````L``@`!````"P`C```````#`"8```````L`*0```````P`N````
M```#`#8``````$ `.0#@W:_*O@_ `1X`< `!````*@```%)%.B!;=WAS:6==
M(%)%.B!(96QP+B @5#(S."!N;W0@<F5P;W)T:6YG`````@%Q``$````6````
```

```
M`< /OLJOZGI0J7M]$=2H5@``Z)L\"0``'@`># $````%````4TU44 `````>
M`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&$ "X<PX#``<0MP(``!X`
M"! !````90```$1!5DE$.E1(3U-%2TE.1%-/1E!23T),14U305)%3D%35%E!
M3EE,54-+5%)924Y'1D524DE415,H4%)!64520D5!1%-)351/3$133TU%3TY%
M0T%,3%-42$5-*5=)3$Q)2$%615(``````@$)$ $```!H`P``9 ,``(<$``!,
M6D9UF3VI,#\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"@"9]"H (R" ["6\R
M-98U`H *@78(D'=K"X"T9#0,8&,`4 L#8P!!@0M@;F<Q,#,S"Z;(($1A$N!D
M.@JB"H31"H!4:&\/H" 3(@0@,&]F(' #8 )@96T'!" *P!; ;F%S='E$+B /
MX&YY( I 8R!K('1R>0N 9R!69@20!1!T!Y$H%W!A0GD$D"!B96$7$4F,)VT9
M0 ;P9"!S`W!690(@%L!C!T!L!"!T\F@7P"$I%<H#\!Q@%<CA"S!L:3,V`4 5
MU!00EQ\!`V :$&,%0$D@#W#>=A; "7 >P &@;!C@#W!O&Z <H 0`%V8@`_ <
MH" ";1C@045!(%!+T"TR,S(8D4D#H"*A_QQ %K$:`"1 #S 5TQK0&8(M'$!U
M#Z ;H&(8X$5-KE C<APQ`Z!D`V!P)$+_&W <, -P`X$;H 1B)<(;</\3@"&0
M%' 5Q!O"(8$9D0G OPA@$T EH1P0"L ET7<AD.<7L!R2(%!U;160&@`8X"LA
MH0D`=QB15P]P="?]!"!W!; D(B25'* LT"M#^%1.0R:S'($G72KP"? N92"
M!< @16$8\&EG/&AT`P`9D1A@!1!K97\=9BF2,2$9P ?@*[ 7L'-Y&)$H1PEP
M+B$"$ 7 =V\T,1RP!< )<' )$1F!+O<UP!S[($5N'^ T82HA%_"-&-%W&H O
M(F9I>"1!WBP<D0A@,7 C<B<@@3(!]R6A*?09@2P5Q 0`!O LT'\9@P-A*>4X
MX#M-`, +@'/[.. /L&,C<B1B%V L8 20IR6D`' 5Q$%0+K!3`,#Q`" @55 %
M\">R,3 )< QG=3MQ):$Q,E9$QRZP`= B\'-U< M0&.#^*$%P&5 Q,!A@(/$6
MP#[3HRCV"'!C92DF,VHE@/\%0"TA&3 *P#>#)%$ET0.!_G4<41C@"7 /H1F"
M(J$;P/\!@#@0"7 C<A7$(&,%H "!#P2!):$/H#J#(%Y#7-A<;DM*P1=A:06Q
M)T%?0R$`@"NP`D 9@F0LT&']&)%-&H :T"VH+/$#D2;@GS6 `B T8RY3(T X
M+C8+_T5R07 EL20Q`C _`1A@&8+_)T$/H"0Q%U A@P# &.!0\;\I6 "0,X$*
MP$^;$&$`56 #`! 0``````,`$1 !`````P" $/____] ``<P`#NXJ;X/P %
M``@P`#NXJ;X/P $+``" "" &`````# ````````1@`````#A0`````````,`
M`H (( 8``````, ```````!&`````!"%`````````P`%@ @@!@`````P ``
M`````$8`````4H4``+<-```#``F "" &`````# ````````1@`````!A0``
M`````!X`(H (( 8``````, ```````!&`````%2%```!````! ```#@N, `+
M`": "" &`````# ````````1@`````.A0````````,`)X (( 8``````, `
M``````!&`````!&%`````````P`I@ @@!@`````P ```````$8`````&(4`
M```````>`#B "" &`````# ````````1@`````VA0```0````$`````````
M'@`Y@ @@!@`````P ```````$8`````-X4```$````!`````````!X`.H (
M( 8``````, ```````!&`````#B%```!`````0`````````>`#T``0````4`
4``!213H@``````,`#33]-P``D(^%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

194. [wxsig] RE: Up and working

From: William Beals <will@beals5.com>
Date: Sat, 26 Aug 2000 18:33:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105306-2000.08.26-19.38.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Charlie:

I got a bit lost in some of your acronyms, not sure what an HSP is.
 Venturing out a bit, it is pretty easy to create a cable that can send
data to both the TNC and your computer. The only tricky bit is that you
need to make sure that the cable to your computer is a pure 1-way cable.
 That is, connect only the ground and T238 Tx signals between the T238 and
your computer. That essentially gives you eavesdropping privialiges on the
data sent to the TNC. Connecting only those signals basically prevents any
signal conflicts where both the computer and TNC might be trying to drive
at the same time.

Hope this answers your question...

will

-----Original Message-----
From: calfano [SMTP:calfano@worldnet.att.net]
Sent: Saturday, August 26, 2000 4:19 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Up and working

To all,

        Finished my T238 Wednesday and every thing worked great. The crew did
a fine job of designing the unit .
        Now I have a question for the masses. I'm running a KPC9612+12 as a
digi and gate.

The work station is attached to the TNC comport and the WX unit is
installed on port 7 of the PC. Therefore as long as the pc is up the wx
data is transmitted. My question is should I build a HSP port for the
TNC so I can kill the PC?

73
Charlie
WA2GUG
--
ned! << File: calfano.vcf >>

```
begin 600 WINMAIL.DAT
M>)\^(A(``0:0" `$`````````!``$``0>0!@`(````Y 0`````````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`;````4D4Z(%MW>'-I
M9UT@57 @86YD('=O<FMI;F<`- D!!8 #``X```#0!P@`&@`2`"$`-@`&`&@!
M`2" `P`.````T <(`!H`$@`>``X`!@`]`0$)@ $`(0```$$P-3 W045!-T0W
M0D0T,3%!.#4V,# P,$4X.4(S0S Y`!T``0.0!@#H!P``(0````L``@`!````
M"P`C```````#`"8```````L`*0```````P`N```````#`#8``````$ `.0!
M9 ![O@_ `1X`< `!````&P```%)%.B!;=WAS:6==(%5P(&%N9"!W;W)K:6YG
M```"`7$``0```!8````!P ^^>P#J>E"A>WT1U*A6``#HFSP)```>`!X,`0``
M``4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80
M>C<KK0,`!Q 0! ``'@`($ $```!E````0TA!4DQ)13I)1T]404))5$Q/4U1)
M3E-/345/1EE/55)!0U)/3EE-4RQ.3U1355)%5TA!5$%.2%-025-614Y455))
M3D=/551!0DE4+$E425-04D545%E%05-95$]#4D5!5$5!0P`````"`0D0`0``
M`,\$``#+! ``$0<``$Q:1G6HF9(V/P`*`0,!]P*D`^,"`&-HP0K <V5T," '
M$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C
M`% +`V,`00M@0&YG,3 S,PNF(.I##W%L") Z"J(*A J $$D@9V\%0&$@8C9I
M!4 )``,%0 N ('.!`W!E(&]F('D(80\8@ 4``B &P',L(&[M&&%S"' 9H'</
M<!AQ`Z (2%-0&3!S+B @NE8)\'0(<18`&;!U&'4W&L 8P00`(!$P#[!T>1 @
M96%S'H!T;R!;!0`>H'09H!B08P&@;#T9H'0;@A^P&5$)\&0@_F;D!B0'O$&
MX" 0( $9H'A43D,;L2#0&?,%H&UN<!TP!) <450AT0(@;/,>T0408VL>@!BR
M'@$@$[\9\1K0"> @T![Q`,!K&:#_&R,@$R'"'[4?`"*+'?(8D,,C`!M!,2UW
M81Z '[-?(U,;D00`&L %H&XE@&-_!4 CQ"'1"< (8"#!(D)4*#(S."'P>!E@
M:6?6;@= !"!B#[!W">$AM-\L@B)/*?8'D""A= <Q(^%X9VEV!Y$E0AZ@,/%D
M^0-@<' <XA$P,. ',2T`_P>1`B ALR#S,#(>XB'%'%'_"% JTQSC*T09`"8Q
M+08>L/\D,#"#'C$P\ (P*+$:@"SE_2JB9A<P*P`$(!MP!) 9H*\A=R@7+#,B
M$6TM`&@%0/LM<"0!>1SB'O$QP##A&("Y)M1S81F1,& '@"X7>OY(,> ?\BBB
M`( MH ^0&>36<0I0&1!I`B N0* 7>I\#\#"0%WH*]!<P,S8!0#\5H % $3 8
M8"KQ$'0Q-G0@+4223P40,- X<DW],!%A,M!$DQ=V0Z1#<0L3P4.F:2TQ-#0!
M0!<P.#$X, % #-!(,V(@;D8#81=@#))B#] W$68#`' ?`%M33510.DE*54!W
M!;!L9"6 =.XN&Y!,($P!71=U26 &8%\",$G'!A <L2#P>1K 0<AU9W49$3(V
M&L !T$%(P" T.C$Y#^!-"4S'5&])QU1!4%)8(%=8!@`^T&,',2"N20(P.7$9
M$4<KT7!,R!AU8FHJ\4G'6W=XX2SQ72!5<"YS2[$4L?YG1C]'2D+T"[87@PKC
M"H#W4, 8@#"0+$';`9%)< N MP0`(= @T&T>@"QS5PF _R6 ,; I<2Z"-Y$[
M\#[R'/%_5=(EH0G!&Y C51\A!^!D/FD+,1>2&)!(`"6 (&K^;TE@&<$!`"SR
M/!,AT2OPYQC!'%!:B4YO!^ 8, ]P_SRR0!=@``6Q(<(`P# A'$'@22=M('(K
M\&$C&) `2U!#.38Q,BM_9F 8@"BQ%W1?8##0+G-G_Q]1/>4C@E72&6 !D&/C
M**+_`D `T%N"-"@BPPD1+G,APO]1P6&S! `7= N :3$PD"6A^S,1:U,W&;(A
MPF8@'% C@?\)<&0Q'W$$( D`9<(DTAF@_'!C'?)3,"&S5/!G!2$"?23"<@!Q
M.U "0 F '%!-?QZ 8Z<>`5MP"&!+X&,!8OYU`Q L$1OC:U-D-5E5(A&_&7!C
M`2!B%+ PD&Z%/Q=Z'C<64!>#%O47=%=!,GA'54<7=$20644E@&2P(2 \/%LA
M'^ Z2D;$+G85H" ^/EE%$?$"``X```,`$! ``````P`1$ (````#`( 0____
M_T `!S#@P*_WO0_ `4 `"##@P*_WO0_ `0L``( (( 8``````, `````````!&
M``````.%`````````P`"@ @@!@`````P ```````$8`````$(4`````````#
M``6 "" &`````# ````````1@````!2A0``MPT```,`"8 (( 8``````, `
M``````!&`````&%`````````'@`B@ @@!@``````P ```````$8`````5(4`
M``$````$````."XP``L`)H (( 8``````, ```````!&``````Z%`````````
M`P`G@ @@!@``````P ```````$8`````$84````````#`"F "" &``````#
M````````1@`````8A0```````!X`.( (( 8``````, ```````!&`````#:%
M```!`````0`````````>`#F "" &``````# ````````1@`````WA0```0``
M``$`````````'@`Z@ @@!@``````P ```````$8`````.(4```$`````!````
B`````!X`/0`!````!0```%)%.B ``````P`--/TW``"M!X4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
```

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

195. [wxsig] RE: Help. T238 not reporting

From: David Norris <dave@webaugur.com>
Date: Sun, 27 Aug 2000 06:39:22 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105355-2000.08.27-06.46.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
> > I have reliably had this problem with my AEA PK-232. In
> > my case it is being caused by EMP.
> Those kinds of problems are nasty. Any luck trying
> ferrites (prayer beads I'm told someone calls them!)

Haven't bothered with ferrite. Counting on them for prayer would
probably be optimistic. The case is metal, so shielding it doesn't seem
to matter. Grounded or ungrounded are equally bad. Antenna system
doesn't make any difference. I pulled the radio off and it still does
it. The power is good. I'm running short of ideas.

My theory is that there is an EMP sensitive device in the TNC. It has
dozens of LEDs poking through the case. The ICs are probably not very
sturdy. I'd bet there isn't an bit of suppression on the 40+
connections on the rear panel.

My plan is to buy something like a KPC-3 or maybe build a simple modem
circuit. This PK-232 is monstrous where I could mount something smaller
in the computer. (And, I want my multi-mode TNC for other stuff! ;-) I
really haven't looked at the hardware options. I keep thinking I want a
radio/modem in a single package, but, I haven't even looked for one. My
APRS is handled entirely by a Pentium running Linux. That leaves me
with a bunch of options, I suppose.

I'm just waiting on a shipment of roundtoits.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

"I would never belong to a club that would have me as a member!"
                                        - Groucho Marx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

196. [wxsig] RE: Help. T238 not reporting

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sun, 27 Aug 2000 07:43:34 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105358-2000.08.27-07.50.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

David Norris wrote:
>
> William Beals wrote:
> > > I have reliably had this problem with my AEA PK-232. In
> > > my case it is being caused by EMP.
> > Those kinds of problems are nasty. Any luck trying
> > ferrites (prayer beads I'm told someone calls them!)
>
> Haven't bothered with ferrite. Counting on them for prayer would
> probably be optimistic. The case is metal, so shielding it doesn't seem
> to matter. Grounded or ungrounded are equally bad. Antenna system
> doesn't make any difference. I pulled the radio off and it still does
> it. The power is good. I'm running short of ideas.
>
> My theory is that there is an EMP sensitive device in the TNC. It has
> dozens of LEDs poking through the case. The ICs are probably not very
> sturdy. I'd bet there isn't an bit of suppression on the 40+
> connections on the rear panel.
>
> My plan is to buy something like a KPC-3 or maybe build a simple modem
> circuit. This PK-232 is monstrous where I could mount something smaller
> in the computer. (And, I want my multi-mode TNC for other stuff! ;-) I

> really haven't looked at the hardware options. I keep thinking I want a
> radio/modem in a single package, but, I haven't even looked for one. My
> APRS is handled entirely by a Pentium running Linux. That leaves me
> with a bunch of options, I suppose.
>
> I'm just waiting on a shipment of roundtoits.

If it's EMP or ESD, ferrite will do little for you. To have an effect
on EMP, you'd have to have a *LOT* of it... to have an effect on ESD,
you need something with less inertia.

It was my experience that the PK-232 was extremely sensitive to power
glitches. HERE, a bit of discreet filtering with an input pi filter
could be effective.

As we don't have too many air-bursts anymore, EMP shouldn't become a big
issue. If you're referring to static discharge, the phenomenon is
analogous but a bit different in duration, frequency and amplitude.

All in all, I think I'd filter the power input, and apply ferrite cores
to the data and audio leads and try again.

73, gerry
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

197. [wxsig] RE: Help. T238 not reporting

From: GS <gsanders1@bigfoot.com>
Date: Sun, 27 Aug 2000 14:19:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105406-2000.08.27-13.26.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gerry Creager N5JXS wrote:
>
> David Norris wrote:
> >
> > My theory is that there is an EMP sensitive device in the TNC. It has
> > dozens of LEDs poking through the case. The ICs are probably not very
> > sturdy. I'd bet there isn't an bit of suppression on the 40+
> > connections on the rear panel.
> >
> > My plan is to buy something like a KPC-3 or maybe build a simple modem
> > circuit. This PK-232 is monstrous where I could mount something smaller
> > in the computer. (And, I want my multi-mode TNC for other stuff! ;-) I
> > really haven't looked at the hardware options. I keep thinking I want a
> > radio/modem in a single package, but, I haven't even looked for one. My
> > APRS is handled entirely by a Pentium running Linux. That leaves me
> > with a bunch of options, I suppose.
> >
> > I'm just waiting on a shipment of roundtoits.
>
> If it's EMP or ESD, ferrite will do little for you. To have an effect
> on EMP, you'd have to have a *LOT* of it... to have an effect on ESD,
> you need something with less inertia.
>

One thought....

Do you happen to have a number of external devices connected to
your unit, and are _ANY_ of them powered or grounded remotely
from the box?

If so, you could create a ground loop situation. I had that happen
here, and every time we had a storm (often, in central Florida!)
I'd lose a few random IC's in various devices.

I corrected the ground loop situation and have greatly improved
the failure rate (although getting it to zero in Florida is near
to impossible, I truly believe).

--

Gary Sanders

Bait for spammers:
root@localhost
postmaster@localhost
admin@localhost
abuse@localhost
postmaster@127.0.0.1

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

198. [wxsig] RE: Help. T238 not reporting

From: David Norris <dave@webaugur.com>
Date: Sun, 27 Aug 2000 18:26:36 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105458-2000.08.27-18.33.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gerry Creager N5JXS wrote:
> It was my experience that the PK-232 was extremely sensitive to power
> glitches. HERE, a bit of discreet filtering with an input pi filter
> could be effective.

It's been my experience that it's extremely sensitive to everything.
But, I keep coming back to power. It can't be coming from the supply
itself. It flakes out any time there is a significant lightning strike
regardless of power source. Under normal conditions it is on a
filtered, regulated 12V supply which is powered by an APC Smart 600.

I think it could easily be getting in through some lines on the rear
panel. Maybe even the power cable. The serial/parallel cable is fully
shielded and grounded to the chassis on the computer end. I'd suspect
the radio connections more than anything. I can pull the antenna off
the radio and it still locks up after a lightning strike.

> All in all, I think I'd filter the power input, and apply ferrite cores
> to the data and audio leads and try again.

I think I'll try building a pi network for the power just to see if it
helps. We're probably due for a few more good storms this year to test
it. There are ferrites on the wires at the moulded plug connecting the
radio.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

"I would never belong to a club that would have me as a member!"
                                          - Groucho Marx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

199. [wxsig] RE: Help. T238 not reporting

From: David Norris <dave@webaugur.com>
Date: Sun, 27 Aug 2000 18:53:21 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105463-2000.08.27-19.00.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

GS wrote:
> Do you happen to have a number of external devices connected to
> your unit, and are _ANY_ of them powered or grounded remotely
> from the box?

The only ground source in the entire system is the UPS. All else is
(intentionally well) isolated from other ground sources. The radio,
TNC, antenna, power supply, etc are completely isolated from other
ground paths. Antenna is mounted on non-conductive PVC with a straight
run of coax to the radio, for instance. I have tried grounding various
devices with no effect.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

"I would never belong to a club that would have me as a member!"
                                        - Groucho Marx

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

200. [wxsig] ANNOUNCEMENT: ARRL/TAPR 19th Annual DCC Sep. 22-24

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 28 Aug 2000 10:23:35 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-105588-2000.08.28-09.31.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Notice:
September 1, 2000 is the last day to receive the special hotel room rate of
$89/night single or double and the pre-registration price for the
conference.

ARRL and TAPR 19th Annual
Digital Communications Conference
September 22-24, 2000 - Orlando, Florida

For more information see: http://www.tapr.org/dcc

Information
Mark your calendar and start making plans to attend the year's premier event
in digital communications. The 19th Annual ARRL and TAPR Digital
Communications Conference will be held September 22-24, 2000, in Orlando,
Florida - just minutes from the Orlando International
Airport.

The ARRL and TAPR Digital Communications Conference is an international
forum for radio amateurs in digital communications, networking, and related
technologies to meet, publish their work, and present new ideas and
techniques for discussion. Presenters and attendees will have the
opportunity to exchange ideas and learn about recent hardware and software
advances, theories, experimental results, and practical applications. The
Digital Communications Conference is not just for the digital expert, but
also for digitally oriented amateurs of all levels of experience.

A Conference for the Beginner as well
The conference is not just for the digital expert. As in years past an
entire session strand with beginning, intermediate, and advanced
presentations on selected topics in digital communications will be offered.
Some of the topics will include: APRS, Satellite Communications, TCP/IP,
Digital Radio, Spread Spectrum and other introductory topics. Come to the
conference and hear these topics presented by the experts!

Area Attractions
The Orlando Florida area is famous for its attractions and vacation spots.
Disney World, Universal Studios, and Sea World (just to name a few) are
within 15 minutes of the hotel. Shuttle service from the hotel will be
available for a small fee. Cape Canaveral and Cocoa Beach are a 30 minute
drive East of the hotel.

Symposia, Seminars and Banquet
Two symposia/seminars will be held which allow those with additional time
and interest to make the most of the Conference. For those who may have
interest in just one symposium or seminar, registration for the conference
is not required to attend these activities. This allows maximum flexibility
for those who may want to participate during the Digital Communications
Conference, but do not have an entire weekend to devote to the event.

The Fourth APRS National Symposium will be held on Friday and will be
moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely
include many APRS software authors, such as Bob Bruninga, WB4APR (the father
ofAPRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS
and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), Mike
Musick, N0QBF (developer of PocketAPRS), and other nationally known APRS

leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

On Saturday night the DCC Banquet will be held. A guest speaker will speak after the banquet and a prize drawing will top the evening. The Grand Prize is a Palm VII Personal Digital Assistant and Synergy Systems LLC has donated two M12 development kits and many more.

The Sunday morning seminar will be focused on PIC development, design, and programming. This five-and-a-half hour seminar will focus on the things you need to know now in order to understand and begin to participate in PIC development.

Co-Hosts
The 2000 ARRL and TAPR Digital Communications Conference local co-hosts will be:
Lake Monroe Amateur Radio Society
  (http://www.qsl.net/lmars/),
Orange County ARES/RACES
  (http://evcom.net/~jvoisin/ares.htm),
Seminole County ARES/RACES
  (http://wwww.geocities.com/capecanaveral/launchpad/4773),
and Orlando Amateur Radio Club
  (http://www.oarc.org/).

International Co-Hosts PRUG (Packet Radio User Group of Japan) will be the International co-host for a third year running. PRUG will be hosting an informal social Friday evening before their seminar and symposium is held. Visit http://www.prug.or.jp for more information about PRUG.

Hotel
Conference presentations, meetings, and seminars will be held at the Orlando Airport Marriott. It is highly recommended that you book your room prior to arriving. A special DCC room rate of $89/single and $89/double per night has been blocked for 50 rooms and is available until September 1st, 2000. Once the 50 rooms have been reserved, room rates will increase. So be sure to book your rooms early! The hotel provides transportation to and from the Orlando International Airport. Please contact the hotel to arrange specific transportation needs.

Orlando Airport Marriott (conference hotel)
7499 Augusta Drive
Orlando, FL 32822
Phone 407-851-9000, Fax 407-857-6211
(http://marriotthotels.com/MCOAP/)

What you can expect at DCC 2000
- A full day of papers and breakouts for the beginner to the advanced
- Two seminars/symposiums
- The fifth annual Student Paper session.
- A banquet with Special Guest Speaker.
- Informal get-togethers throughout the weekend.
- TAPR Membership Meeting
- An event at which the most important new developments in amateur
  digital communications are announced.
- Digital 'movers and shakers' from all over the world in attendance.

There are few activities where your participation can be so much fun and important! What a great way to share and renew your enthusiasm for digital amateur radio! A get-together with colleagues and bringing each other up to date on your latest work -- all this, and more, for an unforgettable weekend of amateur radio and digital communications. We hope to see you at the ARRL and TAPR Digital Communications Conference on September 22-24, 2000!

Full information on the conference and hotel information can be obtained by contacting:

Tucson Amateur Packet Radio
Phone: (940) 383-0000.
Fax: (940) 566-2544
Email: tapr@tapr.org
Web: http://www.tapr.org

Registration Form
Contact the TAPR office by Phone 940-383-0000, Fax 940-566-2544, or Internet: http://www.tapr.org and tapr@tapr.org to register or for

additional information.

Conference Registration includes: Conference Proceedings, Sessions,
Meetings, and Lunch on Saturday.

- Pre-Registration (before Sept 1st)

                          $45.00 _____

- Registration (after Sept 1) or at door

                          $55.00 _____

- Saturday Evening Dinner (Limited Space)
Dinner with Guest Speaker
Prize Drawing

                         $30.00 _____

Symposia/Seminars

- 4th Annual APRS National Symposium
Friday, 1pm - 7pm. $25.00 _____

- Sunday Seminar
PIC Design, Development, and Programming

Sunday, 8:30 am - 2 pm. $20.00 _____

    TOTAL _____

Name/Call:

Street Address:

City/State/Zip:

Country:

Phone Number:

Email:

Charge my credit card (circle one):

VISA   MasterCard

Acct:

Expiration Date:

Signature on card:

Mail completed registration form with check to:
TAPR
8987-309 E Tanque Verde Rd #3378
Tucson, AZ 85749-9399

Or check http://www.tapr.org/dcc for an on-line registration form.

A registration packet will be mailed in September upon receipt of
registration form and payment.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

201. [wxsig] T238

From: "john e mclemore" <turkey2@frontiernet.net>
Date: Tue, 29 Aug 2000 20:49:36
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106139-2000.08.29-20.56.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

HI, WATCHING YOUR PROBLEMS WITH THIS UNIT,IS THIS "SINGLE WIRE "SYSTEM
SHIELDED? AM STATIONS,STATIC AND TWO-WAY CAN REALLY MESS THINGS UP.

YOU MUST TERMINATE EACH INPUT TO CLEAR "GHOST READINGS" WILL THE T238 ACT
AS A RS232 TO CLOSURE FOR CONTROLING "THINGS BY RS232"? OR IS IT JUST A
remote system for reading external "things(voltage)"? ok have been looking
at various remote to rs232 for aprs..most too expencive...73,john,wilcox
co's only ham...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

202. [wxsig] RE: T238

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 29 Aug 2000 23:10:57 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106188-2000.08.29-22.39.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: john e mclemore
> Sent: Tuesday, August 29, 2000 8:50 PM
>
> HI, WATCHING YOUR PROBLEMS WITH THIS UNIT,IS THIS "SINGLE WIRE "SYSTEM
> SHIELDED? AM STATIONS,STATIC AND TWO-WAY CAN REALLY MESS THINGS UP.
> YOU MUST TERMINATE EACH INPUT TO CLEAR "GHOST READINGS" WILL
> THE T238 ACT AS A RS232 TO CLOSURE FOR CONTROLING "THINGS BY RS232"?
> OR IS IT JUST A remote system for reading external "things(voltage)"?
ok
> have been looking at various remote to rs232 for aprs..most too
expencive
> ...73,john,wilcox co's only ham...

  WHOA!!! so far the only persistent problem that has occured to more
than one person is really a TNC problem. I am not sure exactly how many
units we have running 24/7 but my T-238 has been running just fine with
no problems for MONTHS without being reset. I am in a fairly nasty
situation in that it is in the midst of RF and some real interesting RFI
raised by a mixed bag of DC/AC inverters and living at 1600 feet on the
wall of a valley that is locally legendary for summer T-storms. This
"One-Wire" system is digital and is fairly immune to most fo what you
say. Many of the 'problems' you may have seen were hypotheical, guys
trying to anticipate where we might have problomes, but most have them
have yet to materialize.

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

203. [wxsig] RE: T238

From: William Beals <will@beals5.com>
Date: Tue, 29 Aug 2000 21:48:14 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106190-2000.08.29-22.49.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

The cables to the sensor are not shielded. For the most part they are
twisted pair wires which while not near as good as shielding, should
protect us against the nastier issues. All of the data from the sensors
are sent digitally with CRCs on the data to ensure errors are detected
before any bad data get reported. I still have a few holes that let an
occasional (once/month or so) bad set of data out that needs chasing. Not
sure where some ghost readings could get in, but am open to suggestions.

For now the problems we're discussing are I think mostly TNC issues, not
T238 issues. This is unless we are the ones introducing the nasties into
the TNC, but it sounds like the PK232MBX had these problems long before the
T238 came along.

will

-----Original Message-----
From: john e mclemore [SMTP:turkey2@frontiernet.net]
Sent: Tuesday, August 29, 2000 2:50 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] T238

HI, WATCHING YOUR PROBLEMS WITH THIS UNIT,IS THIS "SINGLE WIRE "SYSTEM
SHIELDED? AM STATIONS,STATIC AND TWO-WAY CAN REALLY MESS THINGS UP.
YOU MUST TERMINATE EACH INPUT TO CLEAR "GHOST READINGS" WILL THE T238 ACT
AS A RS232 TO CLOSURE FOR CONTROLING "THINGS BY RS232"? OR IS IT JUST A
remote system for reading external "things(voltage)"? ok have been looking
at various remote to rs232 for aprs..most too expencive...73,john,wilcox
co's only ham...

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(B,#`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`1````4D4Z(%MW>'-I
M9UT@5#(S. #L! $%@ ,`#@```- '" `=`!4`, `.``(`40$!(( #``X```#0
M!P@`'0`5`"@`#0`"`$@!`0F `0`A````.45"1D,X1C!&,S=$1#0Q,4$X-38P
M,# P13@Y0C-#,#D`0 <!`Y &`,0(```A````"P`"```$````+`",````````,`
M)@``````"P`I```````#`"X````````,`-@``````0 `Y`."ZW!\U$L !'@!P
M``$````1````4D4Z(%MW>'-I9UT@5#(S. `````"``7$``0```!8````!P!(U
M']SPR+^???,1U*A6``#HFSP)```>`!X,`0````4```!33510`````!X`'PP!
M````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80WDDD=@,`!Q#9! ``'@`($ $`
M``!E````2D](3CI42$5#04),15-43U1(15-%3E-/4D%214Y/5%-(245,1$5$
M1D]25$A%34]35%!!4E142$5905)%5%=)4U1%1%!!25)725)%4U=(24-(5TA)
M3$5.3U1.14%205-'3T]$00`````"`0D0`0```+,%``"O!0``RP<``$Q:1G6^
MC^ 3/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]$PJ
M",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF
M(.!*;VAN.@JB"H0*@*!4:&4@8P&@; >1_'1O&* 8$0^@`(%L0K 21@@;F\%
M0'-H")!LP0$`9"X@($8%L1CBO01@<P5 "K$%0!CA>1F#VG0#\70)@!N!:07
M`_#["7 $('<:( ]@'9(8<!G#E&YE"L%A!"!G;P1PYQ[B&A0+@&<L&@$(8!I0
M5QN `V <L&,%0'4$(&&N9PMQ&V$8XFX>\'0(D98@! $*4',:D4%L`R"D;V88
MTV1A`9 @`U(_&-DA41FA&2$%0!_P9VD?`9 C4!P0`_ 8X"!#4OY#!" "(".H
M&+$9,0AP&""_!) #8"4E`0`@\AS!8@$0SP6P&" `<!P08F$<T"/S:F</L")
M<')$1IS2>\9$")@(U$/<'8J$20P!]%_(& 8<P]P!4 8< 5 `Y%OGF,80 "0
M`B '0" H`B#X8V4O!& ",!W@!;$94/XI*F,/H2-R(_,(8!O"+:%_'J)@ 0@
M#V$`D!8`&I%.?QGB*$(=H 20&0$#<!@@9_\@8!MA"7 J@" !,?$@<RL"*PN
M(#!B,3%A)'!O</<)\!BB(M!G*P`B40(@(P!_%TH:PAG0!^ 8XB#!&&%MV1V!
M92<I`@0`8R% ,D)O&8,K\!C@"X!K&S,F450<3D,BI2 P&=)4,C.^."*H& `$
M`"*A(3!N&'&_.6(<)!@1`B 'D0N = -@_F05$#I2(?@_<QC$.\$UI(\F$"_1
M/B QX6QI:S[DA%!+/- R34)8+&'_'- 8X0^@..@)`#IA*<5!8_\\TAA ,\$'
M0$4Q-VL#\"-0SQ=*2(X+,$+0,S8!0!6@AP% (,40=#$V("U+HFY/!1 F`"ZR
M33Y1(7!E/TNC%T8@U$J!"Q-*MFDM&#$T- % 0M Q.##W`4 ,T$]#8AJP`V$7
M, R2NF(/T&H7`2@`&S!C.3$!*?);4TU44#ITXPAP0O!Y,D #40(P")'I'J!T
M+E/!71=%4' &8%L",%#75"+A(_!Y(#!!YS; (4 %0#(Y(# !T$_025:0.C4/
MT%!-5$=4@F]5&$%04B!70]#N4S9 0 `NP4D",#-A&V$21P-@=7!42'5B:B,A
M`5#76W=X`)!G73\\LTU/3EI*! NV%U-(22$@,%=!5$-@$$Y',"!93U59$%D`
M3T*$3$4%X5=)5$@[L--@$ 7P54YAT"QB,6(3W")38*%A<&&Q4F.08S!865-4
M88 71%-@$$6@3$1%1#\/X$T&`(%8X%1)3TY3+&6C$3O@04Y$.[!73RT=8%!9
M)L!FH ?P14%,XDQG0$U%4V+#8+!B06Y0-V5@X070560P.[!%_%)-8*!@8&.0
M9[!@@"O@:$Y056G13R; 87!!85D0(D=(3VG!9Z%$_6B"(F&Q9]!B`6.0/,-J
MH*I4%T1!!?!!!_!30X%/:S1L`&$`8Y!&3UD00U5E\%1A0$Q@HB)H94+[9T!N
MHR)E4&_!8C%AT!;@?6FR01=$"7 $8!RP&1!YWQRA)' IX31&* !X6@$NLL8B
M.O(TL"@@=@;P`9#U*P`I<:%O.S L<RG -E'?"0!VD#I2%T0MH78*P"Z0OR%!
M<R48L0^0;L)T`F$1,-TC`"X;0QBP)_%X-D% `$,LD'IP+C<S+%%B+-M'X06@
M>'?5!: G)P(F4=T/<&U[L1=*31=9"& 9@]\Z$"B0):$F42+08@3R*<#O1!$8
MP%QC'N$Z'3 &T!ZPR&QS0 6@;7 A0 20_WN1@J$7I1C /B" IQD2'U'_*; 5
MX3LP.4 +< ,@&+$8< TL@2U<8T\P-3<P-WQ-0$+0&V C``&0$3 N506P9TB/
M"A'Q`(F@``,`$! ``````P`1$ `````#`( 0_____T `!S @CX@!-!+ `4 `
M"# @CX@!-!+ `0L``(((8``````, ```````!&``````.%`````````P`"

```
M@ @@!@``````P ```````$8`````$(4````````#``6 "" &``````# ````
M````1@````!2A0``MPT```,`"8 (( 8``````, ```````!&``````&%````
M````'@`B@ @@!@``````P ```````$8`````5(4```$````$````."XP``L`
M)H (( 8``````, ```````!&``````Z%`````````P`G@ @@!@``````P ``
M`````$8`````$84````````#`"F "" &``````# ````````1@`````8A0``
M`````!X`.( (( 8``````, ```````!&`````#:%```!`````0`````````>
M`#F "" &``````# ````````1@`````WA0```0````$`````````'@`Z@ @@
M!@``````P ```````$8`````.(4```$````!`````````!X`/0`!````!0``
3`%)%.B ``````P`--/TW```B2H4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

204. [wxsig] Re: T238

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Wed, 30 Aug 2000 07:22:17 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106284-2000.08.30-07.29.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

john e mclemore wrote:
>
> HI, WATCHING YOUR PROBLEMS WITH THIS UNIT,IS THIS "SINGLE WIRE "SYSTEM
> SHIELDED? AM STATIONS,STATIC AND TWO-WAY CAN REALLY MESS THINGS UP.
> YOU MUST TERMINATE EACH INPUT TO CLEAR "GHOST READINGS" WILL THE T238 ACT
> AS A RS232 TO CLOSURE FOR CONTROLING "THINGS BY RS232"? OR IS IT JUST A
> remote system for reading external "things(voltage)"? ok have been looking
> at various remote to rs232 for aprs..most too expencive...73,john,wilcox
> co's only ham...

Er, ah, before you go too far down the path of "terminating both ends,
we need to recall that common mode noise rejection premises recommend
grounding the shield A) at one end of a 2-piece, isolated system, B) to
a common ground (single point grounding); and C) using a common power
source where possible. All of this is to reduce the potential for
ground loops and common mode noise introduction on the power line.

Twisted pair, real twisted pair, will generally perform well to
frequencies of 10 MHz (burst) and 6-8 MHz continuous. Ethernet 10BaseT
is a good example (100BaseT is still a bit problemmatic in that regard,
and while its burst performance is OK, its consistent performance is
somewhat lacking. That isn't stopping the world from trying to put 100
MHz computer signals on wire that doesn't possess the constant impedence
or shielding to do the job... but I digress).

For an AM station to introduce a noise component into a system, the
system smust have an adequate "antenna" and be situated in a
significantly high RF field. Blaming the AM station across town is a
little bit of a stretch. Similarly, "static" is usually a burst, high
frequency noise source. If adequate care is taken with cabling and
single point grounding, it shouldn't be a problem unless, again, you're
right in the vicinity of the origin of the "static."

"Two-way" operates at higher frequencies and at lower power levels than
AM stations, and produce less inductable magnetic fields. As such, they
are less prone to cause problems than LF/MF/HF signals in this regard.
Again, good shielding practices and single point grounds should
alleviate most problems.

The One-wire" concept was promoted by Dallas Semiconductors as a
monitoring and control mechanism for a whole spate of little
microprocessor controlled devices. They spent a fair bit of time on the
spec and development, and it's pretty widely used. It's not really
comparable to monitoring a TNC, or such, but is a more elegant solution
for, say, a weather station than my Qualimetric Q-Net box with a
bizillion wires and an RS-422 link to the house. For more info on the
single wire control and monitoring concept, I'd recommend
http://www.ibutton.com

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control

Texas A&M University 979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

205. [wxsig] 4800 Baud

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 30 Aug 2000 12:47:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106362-2000.08.30-12.52.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I picked up a used Kantronics KPC (1) for use with my Wx station the other day. This unit started life as one of the first Kantronics TNC's and was upgraded to a KPC II later on.

Unfortunately, the darn thing doesn't support 4800 baud, which makes it un-usable with my T238! I think I read that he T238 was set for 4800 baud so it was compatible with most GPS stuff. I wish the T238 had a 9600 baud setting so it would be compatible with most everything else I own!

Am I all wet on this?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

206. [wxsig] Re: 4800 Baud

From: Michael Barelli "W□MAF" <barelmic@yahoo.com>
Date: Wed, 30 Aug 2000 13:00:36 -0700 (PDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106422-2000.08.30-15.07.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The T238 in the tnc modes is 4800 or 2800 respectivly.

Use the Peet mode at 2800 but you will loose average data.
I am using the Peet mode with the KPC3+ ver 8.3 and must use the Peet mode. I just recieved a beta upgrade to add a LF charactor to the TNC modes and will be testing tonight.

73 W0MAF

  Rich Beckwith <Rich@dps.state.mo.us> wrote:
I picked up a used Kantronics KPC (1) for use with my Wx station the other day. This unit started life as one of the first Kantronics TNC's and was upgraded to a KPC II later on.

Unfortunately, the darn thing doesn't support 4800 baud, which makes it un-usable with my T238! I think I read that he T238 was set for 4800 baud so it was compatible with most GPS stuff. I wish the T238 had a 9600 baud setting so it would be compatible with most everything else I own!

Am I all wet on this?

You are currently subscribed to wxsig as: w0maf@arrl.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Michael Barelli W□MAF

Do You Yahoo!?
Yahoo! Mail - Free email you can access from anywhere!

207. [wxsig] Initializing sensor ID's in T238 via software

From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Wed, 30 Aug 2000 17:37:28 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106453-2000.08.30-16.37.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi, folks.

My wife (fairly new license, KG4GMJ) just finished building her first kit; a TAPR T-238. (NICE JOB GUYS! It took a week to convince her she could do

it, but now the kit's going in a clear case so she can show it off.) So
far, it works great, but there is one problem.

Our problem is initializing the T-238 with the sensor ID's, a process
identical to the initialization with the DalSemi freeware software. The
station is up on the top of my house (it's been there for a couple of
months, waiting for the '238 kits) and fully functional on the PC. Due to
the pitch of the roof (where do they get these architects, anyhow?), I need
rappelling gear to get up to the weather station. Obviously I don't want to
do this again unless I absolutely have to! From previous email traffic, it
looks as though I can load the sensor data into the T-238's micro via
software once I know the sequence and device ID's.

>From the free computer software .ini files and some help from the ibutton
sig, I've been able to put together a list of sensors and ID's. (I still
need to find the ID for the rain gauge. If anyone has any hints, I'd gladly
accept them...) The current list looks like:

AF0000044A63C101 - wind direction sensor - North
EB0000044A63B501 - wind direction sensor - North East
6E0000044A63B201 - wind direction sensor - East
7F0000044A63AF01 - wind direction sensor - South East
260000044A63AC01 - wind direction sensor - South
A10000044A63B801 - wind direction sensor - South West
F80000044A63BB01 - wind direction sensor - West
130000044A63BE01 - wind direction sensor - North West
E0000000011A941D - wind speed counter
D90000001532EA12 - addressable switch for wind direction
CB00000040583910 - temperature sensor

I've already downloaded all the programs and source code from Will's and
Motorola's sites. If I understand correctly, I need to plug the ID's into
Will's wireids.asm file. I've looked at the file and I ***THINK*** I know
where the ID's go (Will seems to have commented that section of the code
well enough) and the byte-pairing order to enter (essentially the reverse of
what is shown in the table above.) From this point on, I'm pretty much
lost. (It's been 15 years since I've done any assembly level programming,
but it looks like I'm going to learn it again REAL FAST!)

I take it the MON08 downloader will not work to upload just this information
to the flash memory, or will it? God forbid if I have to use the Motorola
stuff to reburn the entire monitor, program, etc.

Also, how do I tell which version of the program is in the '08? I thought I
saw where I may need to flash the 1.10.00 release in since the '08 shipped
with an older program?

If anyone can offer this old newbie some advice, it would be a wonderful
thing. ;-)

Thanks for the assistance.

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

208. [wxsig] Re: Initializing sensor ID's in T238 via software

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 30 Aug 2000 16:53:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106462-2000.08.30-16.57.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I wouldn't mind a way of entering these values manually through the menus. It would prevent some
climbing. For that matter, it would be nice to have the T238 store configurations for more than 1
station.   Maybee station 1 to 5.

>>> Rickey_Hampton@PremierInc.com 08/30/00 04:37PM >>>
Hi, folks.

My wife (fairly new license, KG4GMJ) just finished building her first kit; a
TAPR T-238. (NICE JOB GUYS! It took a week to convince her she could do
it, but now the kit's going in a clear case so she can show it off.) So
far, it works great, but there is one problem.

...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

209. [wxsig] RE: 4800 Baud

From: William Beals <will@beals5.com>
Date: Wed, 30 Aug 2000 21:49:33 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106535-2000.08.30-23.32.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Your wish is not wet. I have been trying to cut down on the number of options and such just to keep the user interface simple and selecting unique baud rates no matter what the mode was an area that I thought I could get away with--until now.

Changing baud rates isn't quite as trivial as I would like. The data that is dispatched to the UART is done in in bursts every 100ms, so I cannot queue up more than 100ms of characters each timer tick. Good news is that going up in baud rate is a LOT easier than going down. Changing the baud rate will be the easy part, adding all the user interface screens and testing them will be the pain.

I will add your request to my add-soon feature list.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Wednesday, August 30, 2000 11:47 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] 4800 Baud

I picked up a used Kantronics KPC (1) for use with my Wx station the other day. This unit started life as one of the first Kantronics TNC's and was upgraded to a KPC II later on.

Unfortunately, the darn thing doesn't support 4800 baud, which makes it un-usable with my T238! I think I read that he T238 was set for 4800 baud so it was compatible with most GPS stuff. I wish the T238 had a 9600 baud setting so it would be compatible with most everything else I own!

Am I all wet on this?

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(C0$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`6````4D4Z(%MW>'-I
M9UT@-#@P,"!"875D`&,&`06 `P`.````T <(`!X`%0`Q`"$``P!G`0$@@ ,`
M#@```- '" `>`!4`*P`)``,`20$!"8 !`"$````Y-T1#139&,$)#-T5$-#$Q
M03@U-C P,#!%.#E",T,P.0`^!P$#D 8`: @``"$````+``(``0````L`(P``
M`````P`F```````+`"D```````,`+@```````P`V``````! `#D`8$TX>?X2
MP $>`' ``0```!8```!213H@6W=X<VEG72 T.# P($)A=60````"`7$``0``
M`!8````!P!+^>3#PYMR8?KP1U*A6``#HFSP)```>`!X,`0````4```!33510
M`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80=>N1+P,`!Q"X
M! ``'@`($ $```!E````4DE#2#I93U525TE32$E33DJ45T5424A!5D5"145.
M5%)924Y'5$]#551$3U=.3TY42$5.54U"15)/1D]05$E/3E-!3D1354-(2E53
M5%1/2T5%4%1(155315))3E1%4D9!0T5320`````"``0D0`0```%(%``!.!0``
```

```
MQ <``$Q:1G7D'_I4/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P
M<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@
MP&YG,3 S,PNF!_"Z:0]@.@JB"H0*@%D(81(@`_%H( 0`(&YO!05 =P^P+B @
M22 A#W!V92!B">$@=!1R>0N 9QH@;R!CXG4%0&1O=P.@`B :(')H&<!N=0;0
M!) ;4&8[&U %,&D"( 0@`'!D(,9S%1 8@&IU<P5 &J%Z:PG@<!N#'9 <$0N
M=-T$D&8`T!G `)!M"U 9P+4<\V4?P&,<D!IQ=0,`)G$*4!G0874=$')ANQ\`
M&+(@`, "0!P1=P]P[QVQ&Z$$8AA 81S2'. )<#YA&X$BL1EP&Y (8&=HTR1B
M!::!U;!T09P^P'.#-(W!Y&$$;D"TM(- <D-L#(!C0=QE!%TI##W 6`.<:8B%)
M! !N)P5 (0`F0/<?T00@&C!I%' '0"H"&7"R=R53;&D>`!E!5!NA;F0AH"05
M&*%D! `*L'0/#V )@!J2&Y)505)4WRRS`B 9P N +M)B"' =H"T$(&49L!I
M(!8@,&W\<RP=(!JP)2$`<!C2(0']1%U'C $8 EP)"(#H# 3_QPR#V(`T!\!
M+Y$`T!B ') G!X %P!R08VL904=OGP1P&, 'T"DR)"1G;R"3GQXP+Q(A5AB2
M)!!,3RY _R0``) T,C(R-?0;$AE!*!?W&Y(VN /P; ,@&> ;@S?ARR80"K%T
M,&!A9"SP&G'_!T #(!Y?'V$%``GA'-0AL;L@@QN1;3K;"K +@"X72N<J\3KR
M/%$@>1@2"7 A`6T=I&TF$#Q1+3" &V%F_20`= AP&< K<!V@0,LZXN<72@KT
M*W S-@% %: !0(\1,!C@(&$0=#$V("9P74B13P40*%$JD4T'D'/^826@2),7
M1D>D1W$+$T>F8&DM,30T`4 K<#&..# @#,%,,V(@1@-A2Q<P#))B%M0@0@60
M:P$F,B!;4TU44#K!%O) 9'!S+AV@(:'J+@1@+AV071=%36 &8%L",$W'5PF
M+K!S+"!YS3!@0230'9(S,#!@`=!#," P`#$Z-#</X$T)4.=4;TW'5$%04K52
M,%@&`' %D"J"21[R'4+21P-@,:!0Z'5B:B,@84W'6W=X`)!G7?P@-$RQ3I A
M44H_2TI&].\+MA=3)T49<' T<2UQ,:'W)! >D1T02P!P&C "(!<``00@2U!#
M("@Q*9]#\ 6Q'I$F(T,R5W@=(/]0,1RA&X,8X!N@!<!2H2NS_QBA(-$%0% A
M`" M<2MP1 !_*@(NHAQ!&Y),`"]A7LI4^$Y#)QS4(W(QH G /%#W+70D$%^"
M21EP"V B4@(@>4#+56Y@`40P23 ?`&S_4L$;DBP@!*$;D#C$!Y I<OD=,'!P
M"1%9E"%",& BD/].8@# '@`I,05 (- F@$F@@P)@8&A4,C,X(1E2_6L2:QEA
M(_$M@2*B&Z%O,O\C8P^A7_-L=S!R8R$C<@6@UQ^@85%N>&]7$E %\!V@_G4!
M(!E#&%,;DG$3#W =$/TD$#E'(')6#[ @@W+%)5/_.S%S;W1R+[-K%"! 8%$9
M</<;(6]Q%TI!/Z 9<#S"&1'[&U0$`#]%W@J 2@<8`2/2O1K!<@EP`C!J0!TA
M8@3R[QG@+8-9,RH!.AA &_$'0-QS0'CB'I(9L"YXX1=$_U4`(,& ER A'0$D
M$ )@`'!_< `_D MP/.$:L!_ &:$M`UDS3" U-S W34"O1()0``&0$3 N!;!G
M%TH%$?$`B3 ```,`$! ``````P`1$ `````#`( 0_____T `!S#@3[Z4_1+
M`4 `"##@3[Z4_1+ `0L``( (( 8``````, ```````!&``````.%````````
M`P`"@ @@!@`````P ```````$8`````$(4````````#``6 "" &``````#
M````````1@````!2A0``MPT```,`"8 (( 8``````, ```````!&``````&%
M````````'@`B@ @@!@`````P ```````$8`````5(4```$````$````."XP
M``L`)H (( 8``````, ```````!&``````Z%`````````P`G@ @@!@``````
MP ```````$8`````$84````````#`"F "" &``````# ````````1@`````8
MA0```````!X`.( (( 8``````, ```````!&`````#:%```!`````0``````
M```>`#F "" &``````# ````````1@````WA0```0````$`````````'@`Z
M@ @@!@``````P ```````$8``````.(4```$````!`````````!X`/0`!````
6!0```%)%.B ``````P`--/TW``#8'84`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

210. [wxsig] Transferring Dallas IDs to T238

From: William Beals <will@beals5.com>
Date: Wed, 30 Aug 2000 22:18:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106536-2000.08.30-23.32.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

My development background on this project is showing. I have actually never used the Dallas weather software, I just got the sensor unit, the datasheets for the sensors and started playing. It is clear that most of y'all out there started with the Dallas weather software and migrated to the T238.

Rick: Thanks for the nice comments on the kit. Lots of folk were involved in getting it together. If you are messing with this kind of stuff, you don't qualify for newbie status! The firmware version is displayed when you start up weather logging and is also the first packet transmitted when in TNC modes.

The solution for now:
1) Figure out which sensor is North from your Dallas list. (looks like you already have this)
2) Go to Wireids.asm and go to the "if USERS" area of the IDs (you figured this out too)
3) Plunk in the ID for the North sensor at the fidir1 location.
4) Plunk in the rest of the IDs in increadsing angle order in fidir2-8.
5) Plunk in a value of 0x00 for fwdoff. This is the North offset as I also store the IDs as I find them, not starting with North.

6) All other IDs should be pretty easy to figure out as they are all
unique.

Note that you may not get perfect North corrolation. In my case (and I
suspect Dallas's too), the user-specified north could be a direction that
results in two sensors being activated, not just one. If you are going
strictly by the list of IDs in that configuration file, you are only being
accurate to 45 degrees, not 22.5.

After making the above changes, right now the ony way to get them into your
micro is to use the motorola develoment tools. The tools really arn't that
bad (compared to chiseling out bits on the die anyway!!)

1) Take the latest source code from the website.
2) Decompress all the files.
3) Open up wx08.asm.
4) Starting around line 188, make all SETs SETNOTs except USERS.
5) Run the assembler (should pass!)
6) Start the programmer, erase the whole flash and reprogram it with your
compiled code.
7) Hopefully you will be up and running with the new IDs.

Hopefully the above process will work for you. If you have trouble or
think several steps need elaborating, please let me (and the reflector)
know and I can put it in a FAQ for the website. I'd especially need help
with getting the data out of the Dallas software.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

211. [wxsig] Re: Initializing sensor ID's in T238 via software

From: William Beals <will@beals5.com>
Date: Wed, 30 Aug 2000 22:22:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106537-2000.08.30-23.33.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

This seemed to me like a really big pain. However, compared to repelling
down the roof of a house, maybe it isn't so bad. Entering the data would
just be a big user-interface pain, but the bigger issue is that any data
entered manually is subject to error and in the case of wind direction,
there is no way of verifying it other than random errors when the magnet
was exactly over that sensor and I got no reading. Still probably better
than repelling!

I will add it to the list, but the effort will likely put it not in the
currently-being-worked release.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Wednesday, August 30, 2000 3:53 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Initializing sensor ID's in T238 via software

I wouldn't mind a way of entering these values manually through the menus.
 It would prevent some climbing. For that matter, it would be nice to have
the T238 store configurations for more than 1 station.   Maybee station 1
to 5.

>>> Rickey_Hampton@PremierInc.com 08/30/00 04:37PM >>>
Hi, folks.

My wife (fairly new license, KG4GMJ) just finished building her first kit;
a
TAPR T-238. (NICE JOB GUYS! It took a week to convince her she could do
it, but now the kit's going in a clear case so she can show it off.) So
far, it works great, but there is one problem.
..

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(CL$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`^````4D4Z(%MW>'-I
M9UT@4F4Z($EN:71I86QI>FEN9R!S96YS;W(@240G<R!I;B!4,C,X('9I82!S
M;V9T=V%R90#K% $%@ ,`#@```- '" `>`!8`%@````,`+ $!(( #``X```#0
M!P@`'@`6`!(`# `#`#0!`0F `0`A````039$0T4V1C!"0S=%1#0Q,4$X-38P
M,# P13@Y0C-#,#D`10<!`Y &`,P(```A````"P`"``$````+`",````````,`
M)@``````"P`I```````#`"X```````,`-@``````0 `Y```DJ $#$\ !'@!P
M``$````^````4D4Z(%MW>'-I9UT@4F4Z($EN:71I86QI>FEN9R!S96YS;W(@
M240G<R!I;B!4,C,X('9I82!S;V9T=V%R90````(!<0`!````%@`````' $P,!
MJ/#FW*=^O!'4J%8``.B;/ D``!X`'@P!````!0```%--5% `````'@`?# $`
M```0````=VEL;$!B96%L<S4N8V]M``,`!A B*AW1`P`'$*X$```>``@0`0``
M`&4```!224-(.E1(25-3145-14143TU%3$E+14%214%,3%E"24=004E.2$]7
M159%4BQ#3TU005)%1%1/4D5014Q,24Y'1$]73E1(15)/3T9/1D%(3U5312Q-
M05E"14E425-.5%-/0D%$``````(!"1 !````D 4``(P%``#'!P``3%I&=9^/
MTEX_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (
MR" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V# ;F<Q,#,S"Z8'
M\#II#V Z"J(*A J 5&@5! `@#Z!E!X!D('2$;R '@"!L:6L9``QA( EP!T!L
M>2!B&&EG( JP"X N(" @2&]W978$D"P@G06@;0JQ&)0)<'!E&<";"X :(&0:
MP .@=&@9`+$#8&]F(!U1&7!H"&"G#Z ;( # >6(9`&D%0"D$`&XG!4!S&-!B
M87ID&H%%`C &<1QQ'/)D4F$!D"!W"&!L&*!J/QWP!4 ><1EP&@(=\7(M>PN
M'^%F`- 9`!I"&R!B;G4%0!SR&@%G!) >P7/?"E >P1SA(* 98&X9X""3;PGP
M'^$8D0.!=1FS&")U_&)J!9 CD1C0!) #8 7 SP!P&* +@!SC8V$/H!URLP/P
M*#%D:0EP)V!I`B"O&R <\0EP)+)N&-!W'E"W'7(:\0:0>1QB'J%O*E)[).(#
MH'(H(0-P)[0$('?G'0`<U # 9VX/L"L!!"#497@`T'09T6\:\23DQP^@`( G
M]4D@9RQ0*M+O&9$IH!8`&H%3*? 9P!HP_P-@'V "8!GA#[ ?X2RE'!;^(1=*
M,/ #\#)1'W H02=S_QSR&2 A8"-8`1$)$35$&2+]&=%P(X$>H2K@'K$H=0AP
MMPEP`C 9T"T><!QA+2#@;G(90!B@"7!L&: /H"Z?%THU4A=*"O09(#,V`4 _
M%: !0#*!'^ G8!!T,3;4("T_8D\%$&<+@ = ZP70!Y!S+H!E/V,71CYT!SY!
M"Q,^=FDM,30TXP% &2 Q.# !0 S00P.X8B!&`V$7, R28A;4-"!"!9!K`_ <
M\"!;(%--5% Z%O) 9'AP<RXA8""@.X $8"Y]'?!=%T5$, 9@`C!$EU<K"8 N
MH',@D'D;($%U\F<A4C,P&R !T$.02B! .C4S(%!-1[=40F]$EU1!4%))`%A[
M!@`<(&,',3#@)>,A84<Y`V!U<$>X)R1$EUMWDG@`D&==!_!E.DUA,QZ@!S%I
M>AQB,$5)1(8G!" H850R,S@K</\',!\A`8 K$ EP00]"&CW$OPNV%U,*XS43
M(/(>\FTI8M\@P2LD)=,@%2CQ=@= "E#O!" F5QSP3A%G15 N,PGP^QWP&H%)
M+L$@\Q$P&N$",+L?(1CQ8QD@!M QQ$8%L?\D\P# ,S(;(!ZA(.0><0,`_R+A
M&,$/<!KP'.-28R%@!;#_*+$"($+02> M`"GR!" W@?<8X&$"++,Q8-%APQJ!
M!=#?'E(9`&,U8P$8P34:@3RN'0J /F: %N(90'E?2,9A&V 8P&Y 4 EP5Y 3
M!)!-<&,N&T$@,#@*+THP+TJ1,#0Z,YHW2Q @9H$71$AI&R#9`A!L:T;0%TI-
M&> #\/IF&0`H(L IL!G1+J 'X \9("+@`( >$4M'-$>X34HI(31"T ,`<QT`
M_5\Q=0,0,;(=P"0Q0M /D',%0!2P=#L98!>E3()4!BU2<1J!*$Y)0T40($I/
M0DWP55E3YB%;@QC ;VM7T@G@<P#_&,%A011P:# 9`"QR;H$;,?\A`AR@%T0>
MH"-4*N 'X!SR_W !4@$Q$"OC`Z 9<%T`&:#_!< HTQ\Q=),#D6Z =D$L(OT!
M("YMT 8`=44BP%Z6.M#_=O$9D3:X*H0"("+Q,I$[0+IM.Y4N.YL71$#760A@
M_QE@81(YQB<"!/(><!BC3_,U&6!S4(!W!M 9H7- OQM"(B(:\&A2%Z48T'4`
M@/^ UC R5\("8 !P<P`8< MP?P,@&,$[01KP.J!0`D+P-> W,#=-0#:"1M !
MD+41,"X%L&<72A'Q`(E@`P`0$ `````#`!$0``````,`@!#_____0 `',. I
M67H"$\ !0 `(,. I67H"$\ !"P``@ @@!@`````P `````$8`````X4`
M``````#``* "" &`````# ````````1@`````0A0````````,`!8 (( 8`
M`````, ```````!&`````%*%``"W#0```P`)@ @@!@`````P ```````$8`
M`````84````````>`"* "" &`````# ````````1@````!4A0```0````0`
```

```
M```X+C `"P`F@ @@!@``````P ```````$8`````#H4````````#`"> "" &
M``````# ````````1@`````1A0````````,`*8 (( 8``````, ```````!&
M`````!B%````````'@`X@ @@!@``````P ```````$8`````-H4```$````!
M`````````!X`.8 (( 8``````, ```````!&`````#>%```!`````0``````
M```>`#J "" &``````# ````````1@`````XA0```0````$`````````'@`]
;``$````%````4D4Z( `````#``TT_3<``()+
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

212. [wxsig] Dallas Semi Weather Stations for sale?

From: VTuff59795@aol.com
Date: Thu, 31 Aug 2000 07:18:21 EDT
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106647-2000.08.31-06.25.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi everyone,
            does anyone have a complete station for sale? I missed the cut
off date by two days....

Regards,

Vic

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

213. [wxsig] RE: 4800 Baud

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 31 Aug 2000 08:36:30 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106683-2000.08.31-08.40.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Not a HUGE priority, just a wish!

>>> will@beals5.com 08/30/00 10:49PM >>>
Rich:

Your wish is not wet. I have been trying to cut down on the number of
options and such just to keep the user interface simple and selecting
unique baud rates no matter what the mode was an area that I thought I
could get away with--until now.

Changing baud rates isn't quite as trivial as I would like. The data that
is dispatched to the UART is done in in bursts every 100ms, so I cannot
queue up more than 100ms of characters each timer tick. Good news is that
going up in baud rate is a LOT easier than going down. Changing the baud
rate will be the easy part, adding all the user interface screens and
testing them will be the pain.

I will add your request to my add-soon feature list.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Wednesday, August 30, 2000 11:47 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] 4800 Baud

I picked up a used Kantronics KPC (1) for use with my Wx station the other
day. This unit started life as one of the first Kantronics TNC's and was
upgraded to a KPC II later on.

Unfortunately, the darn thing doesn't support 4800 baud, which makes it
un-usable with my T238! I think I read that he T238 was set for 4800 baud
so it was compatible with most GPS stuff. I wish the T238 had a 9600 baud
setting so it would be compatible with most everything else I own!

Am I all wet on this?

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

214. [wxsig] Re: Initializing sensor ID's in T238 via software

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 31 Aug 2000 08:41:07 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106686-2000.08.31-08.45.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Absolutely not a problem, I have other things (Barometric Pressure) I would rather have. Just thinking out loud!

>>> will@beals5.com 08/30/00 11:22PM >>>
Rich:

This seemed to me like a really big pain. However, compared to repelling down the roof of a house, maybe it isn't so bad. Entering the data would just be a big user-interface pain, but the bigger issue is that any data entered manually is subject to error and in the case of wind direction, there is no way of verifying it other than random errors when the magnet was exactly over that sensor and I got no reading. Still probably better than repelling!

I will add it to the list, but the effort will likely put it not in the currently-being-worked release.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Wednesday, August 30, 2000 3:53 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Initializing sensor ID's in T238 via software

I wouldn't mind a way of entering these values manually through the menus.
 It would prevent some climbing. For that matter, it would be nice to have the T238 store configurations for more than 1 station.   Maybee station 1 to 5.

>>> Rickey_Hampton@PremierInc.com 08/30/00 04:37PM >>>
Hi, folks.

My wife (fairly new license, KG4GMJ) just finished building her first kit; a
TAPR T-238. (NICE JOB GUYS! It took a week to convince her she could do it, but now the kit's going in a clear case so she can show it off.) So far, it works great, but there is one problem.
..

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

215. [wxsig] Re: Initializing sensor ID's in T238 via software

From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Thu, 31 Aug 2000 12:00:02 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106745-2000.08.31-10.59.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Everyone,

I apologize for the long post, but a problem cropped up with identifying the

sensor ID's via the ini.txt file used by the computer software. I posted this to the Ibutton group, but it may also apply to those who initially set the wx station up on a computer and are later migrating to the T-238 as I am doing. Hopefully this will prevent a lot of tower climbing, or in my case, roof rappelling.

Will: If loading the ID's this way works the way I hope it does, I'll document it for you to include in your manual. (BTW, I got your reply, but haven't had time to thoroughly digest it yet. Though encouraging, I'll probably need a few pointers on using the development software when I get to that point. That's a few days away, so I'll let you know....)

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

-----Original Message-----
From: Hampton, Rickey
Sent: Thursday, August 31, 2000 11:47 AM
To: 'arne@henriksens.net'; Dan Awtrey
Cc: 'weather@ibutton.com'
Subject: RE: [weather] Sensor ID's

Arne, et al,

I hate to be the bearer of bad news, but Dan Awtrey was correct. The listing of the ID's in the ini.txt file is not such that the first listing is the ID for the "North" DS2401 chip. (Dan, FYI: Opening the Reference window in the Weather software gives you a blank entry, not the ID of the "North" DS2401 chip as you thought.) The good news is, I was also able to find another way to get ALL the ID's and their correct correlation, though I'm not sure how you can automate the process just yet.

[A short disclaimer: I do not now use Arne's program, not because I don't like it, but because my ultimate goal is to get the weather station off my PC all together and on a TAPR T-238 controller connected to the amateur radio net. The PC was an interim step until I got the T-238 built. I may try later to send the data to the PC for logging, at which time I intend to use Arne's software.]

I went home last night and called up both the I-button32 Viewer and Weather v2.05 programs, in that sequence. (The reverse sequence does not work due to network conflicts.) The I-button32 Viewer will identify all the ID's on the 1-Wire net, INCLUDING THE CHIPS IN THE RAIN GAUGE!!! The I-button viewer may not list any or all of the DS2401's due to the way they are connected through the DS2406 switch chip, but they will be listed in the ini.text file for the Weather program. The I-button viewer WILL show the counter chips in both the anemometer and rain gauge, as well as the switch chips in the wind vane and rain gauge. Since Dan was able to identify the chips in my ini.txt file for me, I was able to identify the chips in the rain gauge through elimination. Clicking on the ID and then the "VIEW" button brings up a window that will allow you to see the counters actually counting provided the wind is blowing and it is raining. (I was lucky last night. I had light rain with light and variable winds. All sensors were actively reporting changes!) You may have to select Memory Page 15 in the viewer to see the counts actually changing. With all the chips now ID'ed, I turned my attention to identifying the "orientation" of the DS2401 wind direction sensors.

With the print-out of the ini.txt file in hand, I called up the Help screen in the Weather v2.05 program and rearranged all the windows so I could simultaneously see the chip ID's in the Viewer, the wind speed and direction indicators in the Weather program and the top of the Help window. As the sensors are polled, their ID's appear at the very top of the Help screen. By watching the wind direction indicator, I was able to correlate the display to the various '2401 direction sensors. (This part of the process took about 45 minutes.)

>From this point, if I understand Arne's software, all you would have to do is rearrange the ID's in the ini.txt file and all should be OK once again.

So, below is the data I started with, and what I ended with:

====From ini.txt====
AF0000044A63C101
EB0000044A63B501
6E0000044A63B201
7F0000044A63AF01

260000044A63AC01
A10000044A63B801
F80000044A63BB01
130000044A63BE01
E0000000011A941D
D90000001532EA12
CB00000040583910
================

Here was my presumed order of the wind direction sensors after Dan was kind
enough to ID all the chips listed in my ini.txt file. Arne, I believe this
was your assumption as well:
=============PRESUMED ORDER============================
AF0000044A63C101 - DS1990A(DS2401) - wind direction sensor - North
EB0000044A63B501 - DS1990A(DS2401) - wind direction sensor - North East
6E0000044A63B201 - DS1990A(DS2401) - wind direction sensor - East
7F0000044A63AF01 - DS1990A(DS2401) - wind direction sensor - South East
260000044A63AC01 - DS1990A(DS2401) - wind direction sensor - South
A10000044A63B801 - DS1990A(DS2401) - wind direction sensor - South West
F80000044A63BB01 - DS1990A(DS2401) - wind direction sensor - West
130000044A63BE01 - DS1990A(DS2401) - wind direction sensor - North West
E0000000011A941D - DS2423 - wind speed counter
D90000001532EA12 - (DS2407)(DS2406) - addressable switch for wind direction
CB00000040583910 - DS1920(DS1820) - temperature sensor
===

After looking in the I-button32 Viewer, I was able to identify these three
additional ID's;
=========Other devices ID'ed in Ibutton Viewer=========
0E0000000F6EB812 - (DS2407)(DS2406) - addressable switch for rain gauge
5F00000000F0EE1D - DS2423 - tilt bucket counter in rain gauge
DD000001AFFA2F09 - DS1982 (DS2502) - 1 kbit Add-Only Memory inside the
DS9097U-009 Universal Serial Port Adapter
===

Be watching the Weather indicators and the ID's flashing up at the top of
the Weather Help screen, I was able to correlate the ID's with the correct
directions. Note that, unfortunately, the list does NOT begin with the
"North" sensor in my installation!
=============OBSERVED ORDER============================
AF0000044A63C101 - DS1990A(DS2401) - wind direction sensor - South West
EB0000044A63B501 - DS1990A(DS2401) - wind direction sensor - West
6E0000044A63B201 - DS1990A(DS2401) - wind direction sensor - North West
7F0000044A63AF01 - DS1990A(DS2401) - wind direction sensor - North
260000044A63AC01 - DS1990A(DS2401) - wind direction sensor - North East
A10000044A63B801 - DS1990A(DS2401) - wind direction sensor - East
F80000044A63BB01 - DS1990A(DS2401) - wind direction sensor - South East
130000044A63BE01 - DS1990A(DS2401) - wind direction sensor - South
E0000000011A941D - DS2423 - wind speed counter
D90000001532EA12 - (DS2407)(DS2406) - addressable switch for wind direction
CB00000040583910 - DS1920(DS1820) - temperature sensor
===

I hope this helps everyone. While it may be a bit of a pain to ID your
sensors this way, it sure beats deinstalling the station and reinitializing
everything. In my case, I don't have to break out the rappelling gear to
get on top of my house.

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

216. [wxsig] Problems with T238 and KPC3+ v 8.3 GPS port

From: John Vause <jdv@iglou.com>
Date: Thu, 31 Aug 2000 21:54:06 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: William Beals <will@beals5.com>
Message-ID: <LYR15067-106830-2000.08.31-21.01.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Anyone having problems getting a KPC3+ with v.8.3 firmware to accept
data from the T238 on the soft serial port (the GPS port)?

I've set the KPC3+ "GPSPORT 2400 NORMAL NOCHECK", set the KPC3+

"GPS 2 @" but I cannot get data into the LT 2 buffer.
The tnc will accept the PEET format data (if I set the KPC3+ "GPS 2 !!")
and stuff it in the LT 2 buffer.

The serial cable is good.

I have gone as far as hacking the UART.ASM source code and recompiled
the WX08 software (Yes I have the software development
programming tools - very handy) so that TNC-DIR and COMPUTER format
data are output at 2400 baud from the T238 and set the KPC3+ "GPS 2 _"
but I still can't get the KPC3+ to accept the data on the GPS port.

I've set the T238 to the various output modes and checked the outputs
using HyperTerminal. The data is there. The KPC3+ does not accept the
data.

The KPC3+ will accept data from my Garmin II+ and 12CX properly on
the GPS port.

I'm stumped. :-(

73

--
* John Vause KF4ERV jdv@iglou.com   *
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

217. [wxsig] May be offline

From: William Beals <will@beals5.com>
Date: Thu, 31 Aug 2000 22:26:18 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106850-2000.08.31-23.29.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I may be offline for a week. I am taking off for the weekend and then a
business trip for the week thereafter. I'll try to get access to my
personal email using a work laptop, but am not sure if it will work yet.
 Don't give up on me if you hear nothing for the week!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

218. [wxsig] RE: Problems with T238 and KPC3+ v 8.3 GPS port

From: William Beals <will@beals5.com>
Date: Thu, 31 Aug 2000 22:31:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-106851-2000.08.31-23.33.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

It appears that the LTP mode is unique in that it requires a CR-LF to
terminate the string correctly instead of the more normal CR-only. I made
a special cut for someone to test this theory and it seems to have fixed
the problem. I'll release this change in the next cut.

will

-----Original Message-----
From: John Vause [SMTP:jdv@iglou.com]
Sent: Thursday, August 31, 2000 7:54 PM
To: TAPR WX Special Interest Group
Cc: William Beals
Subject: [wxsig] Problems with T238 and KPC3+ v 8.3 GPS port

Anyone having problems getting a KPC3+ with v.8.3 firmware to accept
data from the T238 on the soft serial port (the GPS port)?

I've set the KPC3+ "GPSPORT 2400 NORMAL NOCHECK", set the KPC3+
"GPS 2 @" but I cannot get data into the LT 2 buffer.
The tnc will accept the PEET format data (if I set the KPC3+ "GPS 2 !!")
and stuff it in the LT 2 buffer.

The serial cable is good.

I have gone as far as hacking the UART.ASM source code and recompiled
the WX08 software (Yes I have the software development
programming tools - very handy) so that TNC-DIR and COMPUTER format
data are output at 2400 baud from the T238 and set the KPC3+ "GPS 2 _"
but I still can't get the KPC3+ to accept the data on the GPS port.

I've set the T238 to the various output modes and checked the outputs
using HyperTerminal. The data is there. The KPC3+ does not accept the
data.

The KPC3+ will accept data from my Garmin II+ and 12CX properly on
the GPS port.

I'm stumped. :-(

73

--
* John Vause KF4ERV jdv@iglou.com *
--

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@@$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.```````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`X````4D4Z(%MW>'-I
M9UT@4')O8FQE;7,@=VET:"!4,C,X(&%N9"!+4$,S*R!V(#@N,R!'4%,@<&]R
M= `9$0$%@ ,`#@```- '" `?`!8``P`X``0`;P$!(( #``X```#0!P@``P`6
M`!X`*P`$`&$!`0F `0`A````,#(Y.$-&-#8W.#=&1#0Q,4$X-38P,# P13@Y
M0C-#,#D`!P<!`Y &`+P(```A````"P"```$````+`",```````,`)@``````
M"P`I```````#`"X```````,`-@``````0 `Y`$!ES8_-$\ !'@!P``$````X
M````4D4Z(%MW>'-I9UT@4')O8FQE;7,@=VET:"!4,C,X(&%N9"!+4$,S*R!V
M(#@N,R!'4%,@<&]R= `"`7$``0```!8````!P!/-C\U&SY@#?W@1U*A6``#H
MFSP)```>`!X,`0````4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A
M;',U+F-O;0`#``80X;TC&@,`!Q >!0``'@`($ $```!E````2D](3CI)5$%0
M4$5!4E-42$%45$A%3%1034]$14E354Y)455%24Y42$%4251215%525)%4T%#
M4BU,1E1/5$5234E.051%5$A%4U1224Y'0T]24D5#5$Q924Y35$5!1$]&5$A%
M30`````"`0D0`0```(@%``"$!0``R@@``$Q:1G73\"TX/P`*`0,!]P*D`^,"
M`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V
M")!W:PN 9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF(.!*;VAN.@JB"H0*@$))
M!4!A<'!E#X$@#G0/< 5 &+!E($Q4E% @!&(@! `@=0,`WG$*4!G `Z 8LVD%
M0 EP#1HP:0EP!"!A($-2:"U,1AB@;QB@!)!MSPN &- 9(!D"<W0%$!8`AB %
MH0EP8W1L>1IAPQU &&!D(&]F&/,$8/D)<"!N!; `P ,@&]$"(.$>("X@($D9
M<!Z@&2"U&[!S&%!C!S$=H'4%0.L"$ 7 <P-P90(@'.$<0O\=0!BA&=$9`06P
M'C `<!ZP<QKQ#Z!E;1B1'$ /<'9Q&2!F:7@)@!CS$3!OYP)@)( @<B=L`R )
M<"8@?F$/H",D#V$6`!I5'W%E]G@%0"&Q+A=*`_ FH!=*X0KT;&DS-@% %: !
M0 \EX1Q@'@`0=#$V("VU+-)/!1!G'*$#($T'D/QS82?@+-,71BOD*[$+$\$K
MYFDM,30T`4 K,#@Q.# !0 S0,'-B("Y&`V$7, R28A;4(%9$874G(5M331E0
```

```
M.C!J9'9 +4 )``4N^06@;5T713&@!F ",#('!%1H"'!S9&%Y+)D/X'5G,P`%
M0#,Q-F #`= Q`" W.C4T("10332'5&\U6$%0L%(@5U@&`"%%20(P2P20(O)'
M`V!U<#2'0QIC,@=7*>$',&T@0HT88&P/,#27=6)J'?&1,@=;=W@`D&==-\ ?
M)?0$( /P&+ UT#(S. $CXTM00S,K('90(#@N,SJP4 7P</\)$2Y_+XHK- NV
M%U,*XPJ ^$%N>2)R)/$=<B7E!" _)^ "0!UR&[! I#_#=BYW02(E0!R =PK
M(I,`T&/^904P%T0V, &0(> #81CS?T 3`B <]![0)$('(D&3(*8H&0)!9BD_
M%TLG)1$7#Z$8\T"D(D%A4$]2+E0W(#"0#]!.3]!-00),4%%#2$5#2R(?-F!.
MK!=$3X(W("! (NP@8B'!(*!C`' ?D 5 _4;!($GS"X <,AD34O%34)\!( 20
M*04UX!SA;F,_L<<FH4DT&/-0145/\"'Q>P# 5$4H!I @D4ZO4N(A^"$B*1=$
M(_(=0%6A&N+_*!553Q>55F)+Y5.P)A$9POQG;P1P*0L@H"3S7T B@=\G$"'@
M"L%A$0]P8Q2Q'9#)&0)504_@+D$S4"(A?PAP25 =H2#B) $=X0-P<-\#$ F
M%T09`CF ,$! 2Y+Y2+,H60>18%5+5DBS`0#[)1 )`' '@ (P%T0EX0G _SR@
M')%B$5]0/0`LP$#P!)!C'C GL61Y*2(A&*148$Y#+41).6 C\D/ 3TU0551%
M.6!8-.=)F4C""&!T<"'!&-%0$WYB,O >L$I,6T-9;U+Q7[XB%T135!U 5O)3
ML2=4!/].Z$D'&/-)\TLE069?C$YJZT 35-5V"L!I"& $(&WEWP1B&Y$D`0]@
M!9!K)75MY"<]%3,``7)(>1A0<E3]''1L('!68E1D(V,)<'SD^4"D9&\'D5/B
M5SA)F%T_UT=F5PA)^&T>,$<*P!R1C2"024#@(_(Q,D,YD/\EX7PQ'B%+(62H
M=;]VQ#RPCUN!9$ )@"!P.BTH%TK>-Q90%UDLT$3E*C**0)#T1C1L8%8@@#.K
M((",_.XJB=:)?"YE60A@;9,AL+<=T0(P'B%S/< $\F(E<G<<0#[#80$Z/[ &
MT#SB0/MD(C,!<B40-#)6!1Q &@`_D/<D420!&[ "8 !P:R"_)( +< ,@'#$F
M\240+3[#@3!@-3<P-TU *S!9'4!S+@&&0$3 N!;!G"Q=*$?$`F9 #`! 0````
M``,`$1 ``````P" $/____] ``<P(+;_8\T3P % ``@P(+;_8\T3P $+```"
M"" &``````# ````````1@`````#A0````````,``H (( 8``````, ``````
M``!&`````!"%`````````P`%@ @@!@``````P ```````$8`````4H4``+<-
M```#``F "" &``````# ````````1@`````!A0````````!X`(H (( 8``````
M`, ````````!&`````%2%```!````! ```#@N, `+`": "" &``````# ````
M````1@`````.A0````````,`)X (( 8``````, ````````!&`````!&%````
M`````P`I@ @@!@``````P ```````$8`````&(4````````>`#B "" &````
M``# ````````1@`````VA0```0````$`````````'@`Y@ @@!@``````P ``
M`````$8`````-X4```$````!`````````!X`.H (( 8``````, ```````!&
M`````#B%```!`````0`````````>`#T``0````4```!213H@``````,`#33]
%-P``+D.%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

September 2000

Original source file: wxsig.0009
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0009

1. [wxsig] RE: Problems with T238 and KPC3+ v 8.3 GPS port

From: John Vause <jdv@iglou.com>
Date: Fri, 01 Sep 2000 11:54:07 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: William Beals <will@beals5.com>
Message-ID: <LYR15067-106946-2000.09.01-11.01.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

That was it! It's working now.
I appended a "LF" to the TNC-LTP message format and
recompiled. Now the KPC3+ is accepting the T238 data on the GPS port.

Thanks.

73

William Beals wrote:
>
> John:
>
> It appears that the LTP mode is unique in that it requires a CR-LF to
> terminate the string correctly instead of the more normal CR-only. I made
> a special cut for someone to test this theory and it seems to have fixed
> the problem. I'll release this change in the next cut.
>
> will
>
> -----Original Message-----
> From: John Vause [SMTP:jdv@iglou.com]
> Sent: Thursday, August 31, 2000 7:54 PM
> To: TAPR WX Special Interest Group
> Cc: William Beals
> Subject: [wxsig] Problems with T238 and KPC3+ v 8.3 GPS port
>
> Anyone having problems getting a KPC3+ with v.8.3 firmware to accept
> data from the T238 on the soft serial port (the GPS port)?
>
> I've set the KPC3+ "GPSPORT 2400 NORMAL NOCHECK", set the KPC3+
> "GPS 2 @" but I cannot get data into the LT 2 buffer.
> The tnc will accept the PEET format data (if I set the KPC3+ "GPS 2 !!")
> and stuff it in the LT 2 buffer.
>
> The serial cable is good.
>
> I have gone as far as hacking the UART.ASM source code and recompiled
> the WX08 software (Yes I have the software development
> programming tools - very handy) so that TNC-DIR and COMPUTER format
> data are output at 2400 baud from the T238 and set the KPC3+ "GPS 2 _"
> but I still can't get the KPC3+ to accept the data on the GPS port.
>
> I've set the T238 to the various output modes and checked the outputs
> using HyperTerminal. The data is there. The KPC3+ does not accept the
> data.
>
> The KPC3+ will accept data from my Garmin II+ and 12CX properly on
> the GPS port.
>
> I'm stumped. :-(
>

--
* John Vause KF4ERV jdv@iglou.com   *
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] Help, It doesn't talk

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Fri, 1 Sep 2000 17:30:29 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-106999-2000.09.01-19.37.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

After assembling the 1 Wire WX Station I'm having a problem getting it recognized by the computer. I installed the TMEX software (tm31232d.zip) first and then installed the 1-Wire WX software (Weather 205). The iButton viewer shows Devices on 1-Wire net:1. If I go to the viewer is shows DS1982(DS2502) and a serial number (97000001AFD1CA09). If I try to run the Weather software it gives an error : Cannot find a DS2407 on the MicroLan. Shouldn't the viewer show the thermometer, and the other chips? I didn't see a DS2407 listed as one of the chips in the Weather Station. Have I missed a step ? Help. The software is running on a Windows 2000 Professional platform. TIA Edgar, N6OU

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Re: Help, It doesn't talk

From: "Rickey L. Hampton" <76625.2505@compuserve.com>
Date: Sat, 2 Sep 2000 21:28:55 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107189-2000.09.02-20.37.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Edgar said:

"After assembling the 1 Wire WX Station I'm having a problem getting it recognized by the computer. I installed the TMEX software (tm31232d.zip) first and then installed the 1-Wire WX software (Weather 205). The iButton viewer shows Devices on 1-Wire net:1. If I go to the viewer is shows DS1982(DS2502) and a serial number (97000001AFD1CA09). If I try to run the Weather software it gives an error : Cannot find a DS2407 on the MicroLan. Shouldn't the viewer show the thermometer, and the other chips? I didn't see a DS2407 listed as one of the chips in the Weather Station. Have I missed a step ? Help. The software is running on a Windows 2000 Professional platform. TIA Edgar, N6OU"

Edgar,

Looking through some of my notes, it looks like you may have one of two potential problems.

The first is that the DS2407 (addressable switch for the wind vane) isn't initializing properly. One suggestion was to unplug the data cable from the DS9097U interface adapter, wait a few seconds and plug it back in. (By the way, the ID number 97000001AFD1CA09 is the ID for the DS2502 chip inside the DS9097U interface adapter.) In theory, unplugging the data cable gives the interface adapter a few seconds to charge it's power supply cap and for the start-up noise on the bus to subside.

The second problem (more likely from the traffic I've seen on the ibutton reflector) is either a bad or miswired data cable. You didn't mention if you are using the short test cable included with the kit or if you're using the cable you intend to install permanently. If you're using the test cable, you might want to check the continuity of the two conductors to make sure they are neither open nor shorted together. If you're using the "installation" cable, you need to make sure the conductors are wired in the same order in both connectors. Put the two connectors side by side and make sure that the same colored wire is connected to the same pin in both connectors; i.e. black-red-green-yellow is connected to pins 1, 2, 3, &4 in both connectors. If the wiring order is reversed between the two, you have a standard phone cable and will have to reterminate it.

The FAQ's on the ibutton site (www.ibutton.com/weather/faq.html) have a couple of other suggestions you may want to look at. Keep in touch, especially if you intend to later hook the station up to a T-238.

Rick Hampton, WD8KEL
Manager, Operation Support
Premier, CTS
800-825-1786 Ext. 5476

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] Tsunamis and APRS

From: "Dale Huguley" <kg5qd@earthlink.net>
Date: Sun, 3 Sep 2000 14:38:39 -0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107269-2000.09.03-09.51.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All-
This is vaguely off-topic (?)

I finally saw a Tsunami Alert on the emwin feed and was able to built a
parser that at least takes the message and puts it out in aprs message
format. These things are so few and far between that I had never seen one.
Any rate it was interesting to see the preliminary report from Japan- a
request for more data from South Korea- then a refinement of the time from
Yunzo-Sakhalinsk (Far-Eastern Russia). The preliminary plot from Japan was
14 minutes after the quake.

73 de kg5qd Dale

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

5. [wxsig] Bug in Setting up a station.

From: Doug <dbuhrman@radiks.net>
Date: Sun, 03 Sep 2000 10:07:35 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107282-2000.09.03-11.14.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will I noticed a bug in the setup menu. I tried to setup a complete wx station (ws, wind dir,
external temp, rain gauge). I got through the screen that asked for which temp ID to use as a
source, then I got through the screen that asked for which ID to use as the wind speed, after that
it went to the wind direction screen then immediately went back to the select temp ID page. It did
this consistantly and on two different T238 (ver 1.10) boards and two different wx stations. I
downloaded ver 1.09 back into one of the T238 boards and tried again. I had the same results. If
you leave the rain gauge off, initialize the wx station, then setup the rain gauge all is ok.
Thought I would inform you and I hope I explained it well enough.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] Re: Bug in Setting up a station.

From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 4 Sep 2000 22:41:49 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107627-2000.09.04-23.57.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Doug <dbuhrman@radiks.net>
Subject: [wxsig] Bug in Setting up a station.

> Will I noticed a bug in the setup menu. I tried to setup a complete wx
station (ws, wind dir,
> external temp, rain gauge). I got through the screen that asked for which
temp ID to use as a
> source, then I got through the screen that asked for which ID to use as
the wind speed, after that
> it went to the wind direction screen then immediately went back to the
select temp ID page. It did
> this consistantly and on two different T238 (ver 1.10) boards and two
different wx stations. I
> downloaded ver 1.09 back into one of the T238 boards and tried again. I
had the same results. If
> you leave the rain gauge off, initialize the wx station, then setup the
rain gauge all is ok.
> Thought I would inform you and I hope I explained it well enough.

 Doug,

I found the same bug on Thursday and told Will about it. He is on an
all-week business trip, but has the T-238 code along to stare at and see if

he can find out just how this happens. He said that the problem is that
there are lots of things happening when the wind vane setup is happening, so
there are lots of possibilities for things to go wrong. I'll bet that if
you remove the temperature sensor from the weather station board, that
things will work. We've not seen this bug until the two temperature sensor
feature was added. I haven't tried that yet, but plan to in a few days.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] Re: Bug in Setting up a station.

From: William Beals <will@beals5.com>
Date: Mon, 4 Sep 2000 22:56:09 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107647-2000.09.05-00.09.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I'm sortof online while on my trip. Russ is right, I know the issue and will have some code to try by
the time I get home this weekend.

will

-----Original Message-----
From: Russ Chadwick [SMTP:crb5@uswest.net]
Sent: Monday, September 04, 2000 10:42 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Bug in Setting up a station.

----- Original Message -----
From: Doug <dbuhrman@radiks.net>
Subject: [wxsig] Bug in Setting up a station.

> Will I noticed a bug in the setup menu. I tried to setup a complete wx
station (ws, wind dir,
> external temp, rain gauge). I got through the screen that asked for which
temp ID to use as a
> source, then I got through the screen that asked for which ID to use as
the wind speed, after that
> it went to the wind direction screen then immediately went back to the
select temp ID page. It did
> this consistantly and on two different T238 (ver 1.10) boards and two
different wx stations. I
> downloaded ver 1.09 back into one of the T238 boards and tried again. I
had the same results. If
> you leave the rain gauge off, initialize the wx station, then setup the
rain gauge all is ok.
> Thought I would inform you and I hope I explained it well enough.

 Doug,

I found the same bug on Thursday and told Will about it. He is on an
all-week business trip, but has the T-238 code along to stare at and see if
he can find out just how this happens. He said that the problem is that
there are lots of things happening when the wind vane setup is happening, so
there are lots of possibilities for things to go wrong. I'll bet that if
you remove the temperature sensor from the weather station board, that
things will work. We've not seen this bug until the two temperature sensor
feature was added. I haven't tried that yet, but plan to in a few days.

Russ

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] Dead Bus

From: William Beals <will@beals5.com>
Date: Mon, 4 Sep 2000 23:02:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107648-2000.09.05-00.10.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Edgar:

A way to find out if you are having big troubles on the bus is to see if
you get a message when you fire up the T238 for the first time. If I see
no devices on the bus or a grounded bus, I'll issue a warning message
stating so. That is intended to catch big boo-boos like reversed wires or
nothing connected at all (i.e. bad wires).

will

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] Temperature variations

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Tue, 05 Sep 2000 07:09:54 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107691-2000.09.05-07.17.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have had my station on-line now since early July, Started Aug. 18 with
a home brew T-238. I have seen much of talk here about temperature
variations that can be as high as 20 degrees and all kinds of shielding
to help prevent this. I assumed this was on the "high" end due to
exposure to the sun.
I can say now that without a doubt my system is reading +- .5 degrees F
from two other temperature sensors I have installed around my shack. One
is in the shade 10" from the ground the other is in the shade 6' from
the ground and the Dallas Semi is in the direct sun all day 20' from the
ground. All three units are from different companies. The past ten days
or so have been 105-110 degrees F and the Dallas Semi unit has not
indicated any temperatures that are excessive. I have also not seen any
errors on the T-238. Could the variations be on the low end?? Do our
friends in the great white north have any comments? By The Way: The rain
gage can indicate when you have 65+ days with not a drop of rain and
100+ temps. The seesaw will tip once. This can be calibrated for central
Texas soil by pouring one level teaspoon of fine sifted wheat flour in
the top. Also it takes two direct hits from a Blue Jay for one tip. As
far as rain goes I have no idea..30 days and 30 nights would be welcome
now...Bill

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] Re: Bug in Setting up a station.

From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Tue, 5 Sep 2000 10:36:00 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107713-2000.09.05-09.35.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug said,

> Will I noticed a bug in the setup menu. I tried to setup a complete wx
station (ws, wind dir, external temp, rain gauge). <SNIP>

>If you leave the rain gauge off, initialize the wx station, then setup the
rain gauge all is ok.

Then Russ said,

>I found the same bug on Thursday and told Will about it. He is on an
all-week business trip, but has the T-238 code along to stare at and see if
he can find out just how this happens. He said that the problem is that
there are lots of things happening when the wind vane setup is happening, so
there are lots of possibilities for things to go wrong. I'll bet that if
you remove the temperature sensor from the weather station board, that
things will work. We've not seen this bug until the two temperature sensor
feature was added. I haven't tried that yet, but plan to in a few days.

Russ,

Isn't this the way you're supposed to set the system up? I.e., initialize
the basic station only, THEN connect the rain gauge? That's what the T-238
instructions tell you to do and it's also the way the DalSemi software
works. It's also the reason I nearly stroked out when I realized I'd have
to retrieve my station from my rooftop, tear it apart, initialize the T-238,
and then reverse the whole process.

By the way, I was able to successfully load the ID's in the software,
recompile and upload the program to the micro. THE SYSTEM IS UP AND RUNNING
WITHOUT HAVING TO DISASSEMBLE THE WX STATION!!!!   YEAH!!!!!!!!!!!!!!!!!!

Rick Hampton
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Re: Bug in Setting up a station.

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 5 Sep 2000 09:32:28 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107720-2000.09.05-10.39.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rick,

I should have added that the bug is one of those intermittent types.
Sometimes yes, sometimes no. With my current outdoor station, I've never
had this problem. With my test setup on the bench (which is always in a
state of flux), I used to not have the problem. But just in the past week
the bug is there more than half the time. Hopefully, when Will finds it, it
will be gone.

Russ

----- Original Message -----
From: Hampton, Rickey <Rickey_Hampton@PremierInc.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Tuesday, September 05, 2000 8:36 AM
Subject: [wxsig] Re: Bug in Setting up a station.

> Doug said,
>
> > Will I noticed a bug in the setup menu. I tried to setup a complete wx
> station (ws, wind dir, external temp, rain gauge). <SNIP>
>
> >If you leave the rain gauge off, initialize the wx station, then setup
the
> rain gauge all is ok.
>
> Then Russ said,
>
> >I found the same bug on Thursday and told Will about it. He is on an
> all-week business trip, but has the T-238 code along to stare at and see
if
> he can find out just how this happens. He said that the problem is that
> there are lots of things happening when the wind vane setup is happening,
so
> there are lots of possibilities for things to go wrong. I'll bet that if
> you remove the temperature sensor from the weather station board, that
> things will work. We've not seen this bug until the two temperature
sensor
> feature was added. I haven't tried that yet, but plan to in a few days.
>
> Russ,
>
> Isn't this the way you're supposed to set the system up? I.e., initialize
> the basic station only, THEN connect the rain gauge? That's what the
T-238
> instructions tell you to do and it's also the way the DalSemi software
> works. It's also the reason I nearly stroked out when I realized I'd have
> to retrieve my station from my rooftop, tear it apart, initialize the
T-238,

> and then reverse the whole process.
>
> By the way, I was able to successfully load the ID's in the software,
> recompile and upload the program to the micro. THE SYSTEM IS UP AND
RUNNING
> WITHOUT HAVING TO DISASSEMBLE THE WX STATION!!!!   YEAH!!!!!!!!!!!!!!!!!!
>
> Rick Hampton
> Manager, Operations Support
> 800.825.1786 Ext. 5476
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

12. [wxsig] Re: Temperature variations

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 5 Sep 2000 19:31:46 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107828-2000.09.05-20.40.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Bill Ellis <rwsw60@email.sps.mot.com>

> I have had my station on-line now since early July, Started Aug. 18 with
> a home brew T-238. I have seen much of talk here about temperature
> variations that can be as high as 20 degrees and all kinds of shielding
> to help prevent this. I assumed this was on the "high" end due to
> exposure to the sun.

The 20 deg F number is given on the Dallas Semiconductor web site. I did a
side by side test of the Dallas 1-Wire white plastic enclosure and a
ventilated radiation shield manufactured by R.M.Young, Inc, that costs $165
and is widely used by professional meteorologists. Both enclosures had
identical temperature sensing and recording instruments (DS1920
Thermochrons). The Thermochrons were calibrated in an ice-water mixture
before and after the test. This comparison was done for a one week period
last Fall in Colorado with both units receiving full sun all day. The peak
difference that I measured was 16 Deg F with the Dallas unit higher. The
average RMS difference over the week long period was about 3.8 deg F, again
with the Dallas unit higher.

> I can say now that without a doubt my system is reading +- .5 degrees F
> from two other temperature sensors I have installed around my shack. One
> is in the shade 10" from the ground the other is in the shade 6' from
> the ground and the Dallas Semi is in the direct sun all day 20' from the
> ground. All three units are from different companies. The past ten days
> or so have been 105-110 degrees F and the Dallas Semi unit has not
> indicated any temperatures that are excessive. I have also not seen any
> errors on the T-238. Could the variations be on the low end?? Do our
> friends in the great white north have any comments?

Not sure that Colorado would qualify as the great white north, but are the
other two sensors ventilated? That is, can crosswind blow past the sensing
element? I would expect lower (and more correct) temperature measurements
from sensors in ventilated radiation shields in the direct sun.

> By The Way: The rain
> gage can indicate when you have 65+ days with not a drop of rain and
> 100+ temps. The seesaw will tip once.

We sometimes see false tips of rain gauges due to wind here in Colorado.

> This can be calibrated for central
> Texas soil by pouring one level teaspoon of fine sifted wheat flour in
> the top. Also it takes two direct hits from a Blue Jay for one tip. As
> far as rain goes I have no idea..30 days and 30 nights would be welcome
> now.

Sounds grim. We need rain here too. Not sure that I'd like 30 days and 30
nights, but a day or so every week would be about right.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Instructions for uploading ID's to micro

From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Wed, 6 Sep 2000 09:02:58 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107897-2000.09.06-08.03.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

Over the Labor Day weekend, I was able to upload the sensor ID's into the micro and everything is working quite well. I did loose a few hairs trying to figure out how to get past the security checks with the flash programmer and some of the other settings though.

Since I was going to put together some notes for my future reference, would you like me to send them to you as well?

I also have a few other questions about some of the variables. I took some wild stabs and with the exception of the variable for the rain gauge, I think I got everything right. The lifetime total for the rain gauge currently reads somewhere around 49". Since I can only account for a few inches, the rest must be verga.

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] Re: Bug in Setting up a station.

From: William Beals <will@beals5.com>
Date: Wed, 6 Sep 2000 08:05:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107907-2000.09.06-09.33.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rick:

Cool on getting things up and running without having to repel down your roof. Yes, the current instructions say to do things in sequence, but after getting a lot of feedback on the sequencing being a real pain, I added the feature of putting up the IDs and letting the user decide. As you can tell from other postings, I messed up and jump back too early in the event of a wind direction calibaration error and that will get fixed in the next release. I thought I updated the manual to reflect this new feature, but had better go back and check.

will

-----Original Message-----
From: Hampton, Rickey [SMTP:Rickey_Hampton@PremierInc.com]
Sent: Tuesday, September 05, 2000 8:36 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Bug in Setting up a station.

Doug said,

> Will I noticed a bug in the setup menu. I tried to setup a complete wx station (ws, wind dir, external temp, rain gauge). <SNIP>

>If you leave the rain gauge off, initialize the wx station, then setup the rain gauge all is ok.

Then Russ said,

>I found the same bug on Thursday and told Will about it. He is on an
all-week business trip, but has the T-238 code along to stare at and see if
he can find out just how this happens. He said that the problem is that
there are lots of things happening when the wind vane setup is happening,
so
there are lots of possibilities for things to go wrong. I'll bet that if
you remove the temperature sensor from the weather station board, that
things will work. We've not seen this bug until the two temperature sensor
feature was added. I haven't tried that yet, but plan to in a few days.

Russ,

Isn't this the way you're supposed to set the system up? I.e., initialize
the basic station only, THEN connect the rain gauge? That's what the T-238
instructions tell you to do and it's also the way the DalSemi software
works. It's also the reason I nearly stroked out when I realized I'd have
to retrieve my station from my rooftop, tear it apart, initialize the
T-238,
and then reverse the whole process.

By the way, I was able to successfully load the ID's in the software,
recompile and upload the program to the micro. THE SYSTEM IS UP AND
RUNNING
WITHOUT HAVING TO DISASSEMBLE THE WX STATION!!!!   YEAH!!!!!!!!!!!!!!!!!!

Rick Hampton
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] RE: Instructions for uploading ID's to micro

From: William Beals <will@beals5.com>
Date: Wed, 6 Sep 2000 08:23:33 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107908-2000.09.06-09.34.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Cool on getting things working, I think you are the first to try out those
instructions (or at least the first to tell me). I would very much like
feedback on how it went so I can make the instructions clearer for the the
next person that tries to do what you are doing. I make a rotton tester
for stuff like that as I have been dealing with all that data for over 6
months and can make all sorts of bad assumptions.

I know that security stuff is a pain. I know why Mot did it, but it is
still a pain.

Ask away on your questions, I'm sure others are curious too.

On the 49 inch lifetime reading: The counter in the rain guage has battery
backup and the counter will never reset unless power is removed. Since
power cannot be removed, that counter will never get reset. That is the
total counts you have put that reed switch through since Dallas tested it
and you played with it. I am pretty sure now that you have all the IDs
programmed in, you can re-run the regular T238 raing guage calibration
routine and it will "re-discover" the rain-guage ID, but will also read the
current rain count and use it as the new offset so that now your "user"
setting will use the current reading as 0.00". My intent is to do that
every year so I can have a YTD rain amount.

will

-----Original Message-----
From: Hampton, Rickey [SMTP:Rickey_Hampton@PremierInc.com]
Sent: Wednesday, September 06, 2000 7:03 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Instructions for uploading ID's to micro

Will,

Over the Labor Day weekend, I was able to upload the sensor ID's into the micro and everything is working quite well. I did loose a few hairs trying to figure out how to get past the security checks with the flash programmer and some of the other settings though.

Since I was going to put together some notes for my future reference, would you like me to send them to you as well?

I also have a few other questions about some of the variables. I took some wild stabs and with the exception of the variable for the rain gauge, I think I got everything right. The lifetime total for the rain gauge currently reads somewhere around 49". Since I can only account for a few inches, the rest must be verga.

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

16. [wxsig] RE: Weather Station

From: "Scott, Herb" <h-scott@ti.com>
Date: Wed, 6 Sep 2000 11:32:28 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "Dorothy Jones, KA5DWR" <ka5dwr@tapr.org>,
TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-107936-2000.09.06-11.41.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve,
I open to suggestions. From what I can tell, the problem appears to be with the display itself. The T-238 responds to the menu/sel/up/down. Normally you can adjust the V1 bias and each character will display darkened segments. The first row is blank (some random segment darken) and the first segment of the first character in the 2nd row is blank.

I'm confident the wiring connections are correct to the schematic.

I'd like to obtain a replacement display.

Thanks,
Herb Scott WR5V

-----Original Message-----
From: Steven R. Bible [mailto:srbible@gate.net]
Sent: Wednesday, September 06, 2000 9:03 AM
To: Scott, Herb
Cc: Dorothy Jones, KA5DWR
Subject: RE: Weather Station

Hello Herb,

Dorothy tells me you are having problems with your T-238. If 3 of the 4 lines are working, I am not certain if it could be a faulty LCD, wiring problem, or programming of the microcontroller.

If you could join the WXSIG list, there all the builders of the T-238 are online discussing it. We can discuss your problem with a lot of knowledgeable people and get you fixed. If there is a bad part, TAPR will replace it for you.

Please let me know what you would like to do.

 - Steve, N7HPR
   n7hpr@tapr.org

17. [wxsig] RE: Weather Station

From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 6 Sep 2000 20:54:47 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108008-2000.09.06-22.02.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

RE: Weather StationHerb,

One suggestion is to reverse the flat ribbon cable at both ends. If the display is different after the reversal, then I would suspect the ribbon cable. Another suggestion is to look closely (with a magnifying glass) at the solder on the 1X14 header that leads to the display. I don't know if solder bridges could cause your problem or not, but it's easy to check.

Russ
kb0tvj

> ----- Original Message -----
> From: Scott, Herb
> To: TAPR WX Special Interest Group
> Cc: Dorothy Jones, KA5DWR ; TAPR WX Special Interest Group
> Sent: Wednesday, September 06, 2000 10:32 AM
> Subject: [wxsig] RE: Weather Station
>
> Steve,
> I open to suggestions. From what I can tell, the problem appears to be with the display itself. The T-238 responds to the menu/sel/up/down. Normally you can adjust the V1 bias and each character will display darkened segments. The first row is blank (some random segment darken) and the first segment of the first character in the 2nd row is blank.
>
> I'm confident the wiring connections are correct to the schematic.
>
> I'd like to obtain a replacement display.
>
> Thanks,
> Herb Scott WR5V
>
> -----Original Message-----
> From: Steven R. Bible [mailto:srbible@gate.net]
> Sent: Wednesday, September 06, 2000 9:03 AM
> To: Scott, Herb
> Cc: Dorothy Jones, KA5DWR
> Subject: RE: Weather Station
>
> Hello Herb,
>
> Dorothy tells me you are having problems with your T-238. If 3 of the 4 lines are working, I am not certain if it could be a faulty LCD, wiring problem, or programming of the microcontroller.
>
> If you could join the WXSIG list, there all the builders of the T-238 are online discussing it. We can discuss your problem with a lot of knowledgeable people and get you fixed. If there is a bad part, TAPR will replace it for you.
>
> Please let me know what you would like to do.
>
> - Steve, N7HPR
> n7hpr@tapr.org

18. [wxsig] RE: Weather Station

From: "Steven R. Bible" <srbible@gate.net>
Date: Wed, 6 Sep 2000 23:31:42 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108011-2000.09.06-22.39.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

RE: Weather StationRuss,

I think Herb's description of turning up the contrast a good indication that the LCD is bad. I will send him a replacement LCD.

- Steve

-----Original Message-----
From: bounce-wxsig-15059@lists.tapr.org
[mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Russ Chadwick
Sent: Wednesday, September 06, 2000 10:55 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Weather Station

Herb,

One suggestion is to reverse the flat ribbon cable at both ends. If the display is different after the reversal, then I would suspect the ribbon cable. Another suggestion is to look closely (with a magnifying glass) at the solder on the 1X14 header that leads to the display. I don't know if solder bridges could cause your problem or not, but it's easy to check.

Russ
kb0tvj

----- Original Message -----
From: Scott, Herb
To: TAPR WX Special Interest Group
Cc: Dorothy Jones, KA5DWR ; TAPR WX Special Interest Group
Sent: Wednesday, September 06, 2000 10:32 AM
Subject: [wxsig] RE: Weather Station

Steve,
I open to suggestions. From what I can tell, the problem appears to be with the display itself. The T-238 responds to the menu/sel/up/down. Normally you can adjust the V1 bias and each character will display darkened segments. The first row is blank (some random segment darken) and the first segment of the first character in the 2nd row is blank.

I'm confident the wiring connections are correct to the schematic.

I'd like to obtain a replacement display.

Thanks,
Herb Scott WR5V

-----Original Message-----
From: Steven R. Bible [mailto:srbible@gate.net]
Sent: Wednesday, September 06, 2000 9:03 AM
To: Scott, Herb
Cc: Dorothy Jones, KA5DWR
Subject: RE: Weather Station

Hello Herb,

Dorothy tells me you are having problems with your T-238. If 3 of the 4 lines are working, I am not certain if it could be a faulty LCD, wiring problem, or programming of the microcontroller.

If you could join the WXSIG list, there all the builders of the T-238 are online discussing it. We can discuss your problem with a lot of knowledgeable people and get you fixed. If there is a bad part, TAPR will replace it for you.

Please let me know what you would like to do.

- Steve, N7HPR
n7hpr@tapr.org

19. [wxsig] wxsig] RE: Weather Station

From: "Scott, Herb" <h-scott@ti.com>
Date: Thu, 7 Sep 2000 09:10:26 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108084-2000.09.07-09.18.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve, Russ, Thanks for your input. I inspected all solder joints under magnification, component placement etc before I powered up the module. Also

checked connections, solder joints etc when the display did not come up
properly.

Thanks, Herb WR5V

20. [wxsig] RE: Instructions for uploading ID's to micro

From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Thu, 7 Sep 2000 11:02:11 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108088-2000.09.07-10.02.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

"...after getting a lot of feedback on the sequencing being a real pain, I
added the feature of putting up the IDs and letting the user decide. I
thought I updated the manual to reflect this new feature, but had better go
back and check."

You did. I got to the "Wind And Temperature Sensor Setup" section and
evidently stopped reading when I got to the statement, "You must have
physical access to the sensor unit to perform this calibration."

"I would very much like feedback on how it went so I can make the
instructions clearer for the the next person that tries to do what you are
doing."

OK, I'll put something together that tells how to get the information from
the DalSemi software and some of the software selections I had to stumble
through with the development system. All in all, it wasn't terribly hard,
but their are a few areas that could use a little explanation.

"I know that security stuff is a pain. I know why Mot did it, but it is
still a pain."

The trick was figuring out you had buried the access codes in the software.
Why it took me so long to figure THAT out is probably due to the fact that
it was 0300 local when I was hacking.

"Ask away on your questions, I'm sure others are curious too."

I'll try to put together my list this weekend. It's not too long.

"I am pretty sure now that you have all the IDs programmed in, you can
re-run the regular T238 raing guage calibration routine and it will
"re-discover" the rain-guage ID, but will also read the current rain count
and use it as the new offset so that now your "user" setting will use the
current reading as 0.00". My intent is to do that every year so I can have
a YTD rain amount."

See, if I'd done things the way you INTENDED me to do them, I would have
known you could calibrate the rain gauge through the operating software.
But nooooo, being an engineer, ***I*** was going to reset everything by
hacking the code again. (Some day, I might stop banging my head into the
wall. People tell me it hurts less!) I may still do it this way to
preserve the totals I know are legit.

BTW, have you thought about stuffing the counts for the other rain totals in
the non-volatile memory someplace so they don't disappear when the power
goes out? Not a biggie, but just curious since you stored the count for the
initial settings.

Thanks,

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] Flash reprogramming instructions

From: William Beals <will@beals5.com>
Date: Sat, 9 Sep 2000 11:35:25 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108391-2000.09.09-12.52.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rick:

Thanks for the feedback.

Looks like I need to ammend the manual a bit on the part that insists you
need physical access to the sensor unit for calibration. This is the kind
of feedback I need to keep the manual clear. I knew of the exception(!!)

You asked about the rain counts. The rain counts are stored in
non-volatile memory, the flash. I used to have an external EEPROM for
things like IDs and such, but once I went to the 6808 with its flash, I
just stored the variables in there. When you run or re-run the calibration
routines you are reprogramming the internal flash with the new values. Not
quite self-modifying code, but dangerously close.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

22. [wxsig] APRS modem for transmitting WX data

From: "Mark Phillips" <g7ltt@g7ltt.com>

Date: Sat, 9 Sep 2000 14:05:01 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108395-2000.09.09-13.13.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Folks,

Please excuse me if this has already been covered.

I finished building my T238 kit into a Radio Shack project box this morning
and as there is still loads of space left in there I thought I might add a
Tiny Trak module inside to act as the packet modem.

I know that as of about 6 weeks ago the Tiny Trak could only do GPS posits
but I was wondering if someone had looked at this and maybe mundged it to do
WX instaed/also.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Re: APRS modem for transmitting WX data

From: Steve Dimse K4HG <sdimse@netrox.net>

Date: Sat, 9 Sep 2000 14:21:57 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108400-2000.09.09-13.29.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 9/9/00 2:05 PM Mark Phillips (g7ltt@g7ltt.com) wrote:

>I know that as of about 6 weeks ago the Tiny Trak could only do GPS posits
>but I was wondering if someone had looked at this and maybe mundged it to do
>WX instaed/also.
>
No one has to the best of my knowledge. I have code for the Pic-E that

uses the Peet extended record format (on the TAPR Pic-E web site), it
would be easy to modify it to use the data logging format used by the
T238. Then you'd just have to swap out the modem chip routines in the
Pic-E code and replace it with the resistor ladder code used by the Tiny
Track.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] Re: APRS modem for transmitting WX data

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sat, 9 Sep 2000 14:39:07 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108402-2000.09.09-13.47.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I haven't looked but I'm guessing that the Tiny Trak would be easier than
that. I'm also guessing that the Tiny Trak just looks for a string starting
with x and ending in y and then transmits it. This being the case it
shouldn't be too hard should it?

Of course, I could have it totally wrong. I am after all only a amateur in
this programming stuff.

Mark

----- Original Message -----
From: "Steve Dimse K4HG" <sdimse@netrox.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, September 09, 2000 2:21 PM
Subject: [wxsig] Re: APRS modem for transmitting WX data

> On 9/9/00 2:05 PM Mark Phillips (g7ltt@g7ltt.com) wrote:
>
> >I know that as of about 6 weeks ago the Tiny Trak could only do GPS
posits
> >but I was wondering if someone had looked at this and maybe mundged it to
do
> >WX instaed/also.
> >
> No one has to the best of my knowledge. I have code for the Pic-E that
> uses the Peet extended record format (on the TAPR Pic-E web site), it
> would be easy to modify it to use the data logging format used by the
> T238. Then you'd just have to swap out the modem chip routines in the
> Pic-E code and replace it with the resistor ladder code used by the Tiny
> Track.
>
> Steve K4HG
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] Status of T238 APRS Wx Station

From: kramrellim@home.com
Date: Sat, 09 Sep 2000 16:09:42 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108421-2000.09.09-16.17.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was very excited when I read in the Packet Status Register about the T238
APRS Wx Station. When I went to the TAPR WEB page I was disappointed to
read the notice about Dallas Semiconductor discontinuing the 1-Wire(tm)
Weather Station. But when I went to the announcement link I was
confused. Can any body give me what the status of the 1 wire products. Is
it too late for me to get involved with this kit.

Thanks and 73

Mark N5RFX

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

26. [wxsig] RE: Status of T238 APRS Wx Station

From: William Beals <will@beals5.com>
Date: Sat, 9 Sep 2000 18:38:32 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108438-2000.09.09-19.43.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

Hopefully it is not too late. It is temporarily too late as Dallas has quit shipping the weather stations themselves. However, we hear rumors that someone else will be picking up the kit and selling it soon. In addition, I know of at least one person who is working on decent instructions to build your own sensor unit and finding all the parts to easily do it.

Naturally, as soon as something becomes available it'll be announced here and on the TAPR web page.

will

-----Original Message-----
From: kramrellim@home.com [SMTP:kramrellim@home.com]
Sent: Saturday, September 09, 2000 3:10 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Status of T238 APRS Wx Station

I was very excited when I read in the Packet Status Register about the T238 APRS Wx Station. When I went to the TAPR WEB page I was disappointed to read the notice about Dallas Semiconductor discontinuing the 1-Wire(tm) Weather Station. But when I went to the announcement link I was confused. Can any body give me what the status of the 1 wire products. Is it too late for me to get involved with this kit.

Thanks and 73

Mark N5RFX

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(A$``0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G`````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M`````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`K````4D4Z(%MW>'-I
M9UT@4W1A='5S(&]F(%0R,S@@05!24R!7>"!3=&%T:6]N`,P-`06 `P`.````
MT <)``D`$@`F`" `!@!'`0$@@ ,`#@```- '"0`)`!(`) `>``8`0P$!"8 !
M`"$```!&,C%!131&,#=!.#9$-#$Q03@U-C P,#!%.#E",T,P.0`4!P$#D 8`
M[ <```"$````+``(``0````L`(P```````P`F```````+`"D```````,`+#@``
M`````P`V``````! `#D`0!YP<K\:P $>`' ``0```"L```!213H@6W=X<VEG
M72!3=&%T=7,@;V8@5#(S."!!4%)3(%=X(%-T871I;VX```(!<0`!````%@``
M``' &K]R</#D&O.&>A'4J%8``.B;/ D``!X``@P!````!0```%--5% `````
M'@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A#%?H0T`P`'$/T#```>
M``@0`0```&4```!-05)+.DA/4$5&54Q,64E425-.3U143T],051%251)4U1%
M35!/4D%224Q95$]/3$%414%31$%,3$%32$%3455)5%-(25!024Y'5$A%5T5!
M5$A%4E-4051)3TY35$A%35-%3%9%`````(!"1 !````PP0``+\$``#3!@``
M3%I&=3T>%/(_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/
MYGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V# ;F<Q
```

```
M,#,S"Z8%T#D*P&LZ"J(*A J 2&\"< $0=6QL>2!I(P5 ! `@;F\%0'1O!&\@
M"V!T92X@(.9)&+,9H&UP!; *P ,0TQB &48@800@1 = "V G!" /< 0@<748
MH7-H504@< N 9QDP:!N =RYE&9 =< 7 <P&0=&F7`B :,1UP;0^@;'8'D,\9
MP1@`': ?('(L'9$<,/,=L 7 <G4$8 ^0'5$9D/L<P -P90(@&X ?``^@'9#;
M`Q #(&(;@!T08Q2Q'4"\=7 =4Q2P!4 `<&0<P-T?`&P=(ARB&5!N&<(#H+AA
M9&08H!YA'_!)(X"S&0`'X&]F&Y %0&P=L'\>("9@(:$8( ^0`B =D&C[&6 8
MT7<%L"+3)[$%@0GP:QBQ`(!T()!C'E498&*U')!L(_!Y"&$F8'<#H+</H "
M!;%U`P`CM&84P>\=(AOA'5,*L70J(R;A&M+29"@!="X72DX9D AP_1OA>1_P
M&Z$DPC D!X =8,\=(B)P!: '@F%V"W +8/<"8!N &* G(D0`<!D`*]!_*2 C
M\!WA,Q(C\">Q'6)4J$%04AV18BU19QFPGQ=*(B(72@KT)$ S-@% 7Q6@`4 1
M,!D0!9!T$'0QJ#8@+3ER3P409PN ]P= != 'D',U<3ES%T8XA <X40L3.(9I
M+3$T-.,!0"1 ,3@P`4 ,T#T3735 1@-A%S ,DF(/T&O-&J!M"7 D,6U )_ '
M@ (N,:$@6U--5%#V.C\_`W!=%T4U0 9@`C#G/J<&$"^A9&$P`09@!3#G&F B
M< 7 ,#D?\ '0/:"((#,Z%B @4$U"%\Q4;SZG---76 8`&""^8P<Q)2$9H EP
M)P%'`V!C(R!"&'5B:CBQ/J=;9'=X`)!G708`'C%UPP0@)G%4,C,X#^ T\/D%
M\%=X2M,>83L?/"HWU-\+MA=3"N,*@"8`=QNA'\'Y&(!E>$>@&: C\"?@"?!?
M)?$)<"5@*6$=4U `T&OS#[!*UE)E.? >(!WQ`:!_"& 9(32B2Y(71$O=&<%7
M'U%T': I02I!-)=714*_-5-6LANA)8 Z@!T`;PN _U$B*D$71%'3'6(9`2*P
M&X&W5!,;U09@;2*P`B!D*<%O!;%8X5Q1'E!N') =-3$(+5=I"7 H=&TI[4_%
M5QVU5=A"5#%195;J[S,V!X I021!:UAU%T1<4>L80 ^@9!G!0P.1`' 8@-T&
MX&08@#GP'R @!X GT?\A(1UB'B)+)%W3(A$S\3AQ^UR"'T))8Q88H1L7`A %
MP.]E82I!-8 I4G8&\!\@44&]&*!H'5$8T2.1+KM4#W#W8J QX2/A-Q90%UD6
M\@>P<#521E@VO@J .N=9]PA@&Y S\6,(< EP`C 8<7YS27 $\B)P69-*<QN1
M.J<=D$1A!T!S0#&A<&/1_G(?($ B;"498"O0<8<K4OTC\&$B8!7A8K :8#(A
M*C(;)M$?("U*<ST`-3<P^#=-0"1 'B ?0 &0$3!:+@6P9Q=*$?$`>B ``P`0
M$ `````#`!$0``````,`@!#_____0 ``, `CJ2F_&L !0 `(, `CJ2F_&L !
M"P``@ @@!@``````P ```````$8``````X4````````#``* "" &``````#
M````````1@`````0A0````````,`!8 (( 8``````, ```````!&`````%*%
M``"W#0```P`)@ @@!@``````P ```````$8``````84````````>`"* "" &
M``````# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````
MP ```````$8`````#H4````````#`"> "" &``````# ````````1@`````1
MA0````````,`*8 (( 8``````, ```````!&``````!B%````````'@`X@ @@
M!@``````P ```````$8`````-H4```$````!`````````!X`.8 (( 8``````
M`, ```````!&``````#>%```!`````0`````````>`#J "" &``````# ````
M````1@``````XA0```0````$`````````'@`]``$````%````4D4Z( `````#
)``TT_3<``(']
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

27. [wxsig] Re: APRS modem for transmitting WX data

From: "Byon Garrabrant" <byon@mail.com>
Date: Sat, 9 Sep 2000 18:24:30 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108447-2000.09.09-20.32.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am interested in adding weather station support to the TinyTrak.
However, I do not have a weather station. So, I have a few
questions for this group...

- What are the most common data formats & baud rates used by
weather stations. How popular is each one, in approximate
percentages. Is their any documentation on the format(s). Does
anyone have log files from the stations? How often are they sent?

- What is the best output format to send over the air? Is it
supported by most all APRS software?

- How important is adding suport for the 1-wire station?

Thanks for your input & 73,
Byon

_____
Byon Garrabrant N6BG byon@mail.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

28. [wxsig] Re: APRS modem for transmitting WX data

From: Brian Short <k7on@earthlink.net>
Date: Sun, 10 Sep 2000 03:03:09 +0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-108456-2000.09.09-22.09.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Byon,

I spoke with you at the Flagstaff hamfest and bought one
of the TinyTrak kits which I like very well.

I have Peet Brothers units here, a U-100 and a U-800 and
all similar models have a "packet" mode which sends out
$ULT sentences every 5 minutes.

My vote (if you will) is support for the Peet Brothers packet
format. The Peet Brothers FAQ details this format.

Thanks for asking, Brian

At 01:24 AM 9/10/00, you wrote:
>I am interested in adding weather station support to the TinyTrak.
>However, I do not have a weather station. So, I have a few
>questions for this group...
>
>- What are the most common data formats & baud rates used by
>weather stations. How popular is each one, in approximate
>percentages. Is their any documentation on the format(s). Does
>anyone have log files from the stations? How often are they sent?
>
>- What is the best output format to send over the air? Is it
>supported by most all APRS software?
>
>- How important is adding suport for the 1-wire station?
>
>Thanks for your input & 73,
>Byon
>_____________________________________
> Byon Garrabrant   N6BG   byon@mail.com
>
>---
>You are currently subscribed to wxsig as: k7on@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

--
Seek those who find your road agreeable, your personality and mind
stimulating, your philosophy acceptable, and your experience helpful.
Let those who do not, seek their own kind. -Henri Fabre
--
mailto:k7on@earthlink.net
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] Re: APRS modem for transmitting WX data

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sun, 10 Sep 2000 10:37:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108527-2000.09.10-10.42.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Byon,

Our club used 3 TinyTraks in the MS-150 Bikeathon this weekend which is a
fund raiser for Mulitple Sclerosis.   The St. Louis club also used several
TinyTrak based trackers for their leg of MS-150.   We are very pleased with
the results and are amazed at what can be done with Pic technology. Thanks
for an excellent design and a very useful and inexpensive product. We are
also looking at some DF designs based on Pics and three of us have built the
PeekPak featured on your web site.

In terms of Weather monitoring, we now have 6 Dallas 1-Wire Wx stations in
the club and are working to pick up more. Two of us have built the TAPR
T238 which is a Dallas 1-wire development platform based on the Motorola
6808 processor and includes software for monitoring the 1-wire Wx station
and formatting its output for APRS. I am very pleased with the results and
monitor my Wx on FindU.com and WinAPRS. Info at
http://www.tapr.org/tapr/html/Ft238.html and http://www.beals5.com/wx/ .

In terms of my choice for Wx stations support I prefer the 1-Wire based
stations for the following reasons.

1. The 1-Wire stations can be mounted up to 1000' away with a singe run of
twisted pair cable.
2   1-wire devices use VERY little current
3. The 1-wire bus technology is really cool, and allows for monitoring and
control of several types of devices with a single 1-wire bus. I think there
is a lot of potential for remote monitoring and control with this
technology.
4. If you publish your souce code I will shamelessly "borrow" it to develop
other telemetry applications for use with APRS!

In terms of the data format, I would recommend the published APRS
specification for Wx. This is format supported by the TAPR T238 and has
worked well for me using FindU.com and WinAPRS.

I would also recommend reading Russ Chadwick's information on Weather
averaging at http://www.beals5.com/wx/faq.htm This is important for
accurately reporting Wx, as instantaneous readings are not accurate.

I also have designs for a 1-wire Barometric pressure sensor I would be more
than happy to make available to you.

I wish I could give you better statistics on the number of folks using a
particular type of Wx station. My choice was based on $ and technology more
than popularity.

 Rich Beckwith - Wn0x

>Byon Garrabrant Wrote:
>
>I am interested in adding weather station support to the TinyTrak.
>However, I do not have a weather station. So, I have a few
>questions for this group...
>
>- What are the most common data formats & baud rates used by
>weather stations. How popular is each one, in approximate
>percentages. Is their any documentation on the format(s). Does
>anyone have log files from the stations? How often are they sent?
>
>- What is the best output format to send over the air? Is it
>supported by most all APRS software?
>
>- How important is adding suport for the 1-wire station?
>
>Thanks for your input & 73,
>Byon
>_____________________________________
> Byon Garrabrant   N6BG   byon@mail.com
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] Re: Status of T238 APRS Wx Station

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sun, 10 Sep 2000 10:45:12 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108529-2000.09.10-10.49.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark,

Watch the Dalsemi Wx Iist serve. Occasionally folks sell their Wx stations
and they will usually sell them at what the paid for them. I have also seen
some adverstised on E-Bay.   I believe some folks have also picked them up
for Dallas Semiconductor distributors. I have a friend that picked one up
for about $135 (with shipping!) from a DalSemi dealer in Australia of all
places. As Will has mentioned, there are folks working on replacements for
the 1-Wx stations that are inexpensive and easy to build.

Rich Beckwith - Wn0x

-----Original Message-----
From: kramrellim@home.com <kramrellim@home.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Saturday, September 09, 2000 4:10 PM
Subject: [wxsig] Status of T238 APRS Wx Station

>I was very excited when I read in the Packet Status Register about the T238
>APRS Wx Station. When I went to the TAPR WEB page I was disappointed to
>read the notice about Dallas Semiconductor discontinuing the 1-Wire(tm)
>Weather Station. But when I went to the announcement link I was
>confused. Can any body give me what the status of the 1 wire products. Is
>it too late for me to get involved with this kit.
>
>Thanks and 73
>
>Mark N5RFX
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

31. [wxsig] DCC Update 9/11/2000

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Mon, 11 Sep 2000 12:19:03 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108738-2000.09.11-11.27.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

19th Annual ARRL/TAPR Digital Communications Conference
Orlando, FL September 22-24, 2000

** Update 9/11/2000 **

A little more that one week away, the 19th Annual ARRL/TAPR Digital
Communications Conference is about to begin. For detailed information about
the conference, please visit the official DCC web page at
http:www.tapr.org/dcc.

Registration for the conference will be taken at the door. Friday
registration is for an entire afternoon APRS activities, demonstrations, and
presentations. Saturday registration includes conference proceedings,
lunch, and a full day of presentations. Saturday night includes Banquet,
dinner speaker, and prize drawing. Sunday registration is for the PICmicro
Design seminar.

Banquet Prize Drawings:
Grand Prize Kenwood TM-D700A (donated by Kenwood)
2nd Grand Prize Palm VII Personal Digital Assistant
Two Motorola Oncore M12 GPS Evaluation Kits (donated by Synergy Systems,
LLC)

Map and coordinates:
A map of the conference hotel and coordinates are available at
ftp://ftp.tapr.org/dcc/dcc.hotel.map.pdf

Speakers:
The following is a list of presenters. Preliminary schedule is available
from ftp://ftp.tapr.org/dcc/2000.dcc.schedule.pdf

APRS Seminar - Friday September 22, 2000

John Ackerman, N9UR   APRS WG
Steve Bible, N7HPR   T-238 Weather Station
John Blowsky, KB2SCS   APRS LOOKUP
Steve Bragg, KA9MVA   HamHud
Bob Bruninga, WB4APR   APRSdos, satellite, etc.
Steve Dimse, K4HG   Internet APRS

```
Walter Dunckel, KD6VYV    Serial Control of D7/D700
John Hansen, W2FS         KISS TNC, D700 Keyboard
Dale Huguley, KG5QD       Weather Server
Larry Gahagan, AB0JM      Wildfire Support
Byon Garranrant, N6BG     TinyTrack
Mike Musick, N0QBF        PalmAPRS/Tracker construction
Robert Osband, N4SCY      Public Service with APRS
Tom Schaefer, NY4I        APRS Email Gateway
Darryl Smith, VK2TDS      APRS in the 2000 Olympics
The Sprouls, WU2Z/KB2ICI  Mac/Win/XAPRS
Rob Wittner, KZ5RW        APRS-CE

Main Session, Paper Presentation - Saturday 23, 2000
Titles and abstracts are available at
http://www.tapr.org/tapr/html/Fcnc19.html

EasyTrak, A PIC Based Rotor/Radio Controller Interface
By Steve Bible N7HPR

APRS Tiny Web Pages
By Bob Bruninga WB4APR

Channel Capacity Simulation of Peer-to-Peer Spread Spectrum Satellite
Transponders
By Matthew Ettus N2MJI

Correlation for Direct Sequence Spread Spectrum
By Panagiotis Gavalas

PIC-et Radio II: How to Receive AX.25 UI Frames Using Inexpensive PIC
Microcontrollers
By John A. Hansen W2FS

Winlink 2000 ...A Global Ham Message Transfer and Deliver Network
By Hans Kessler N8PGR, Vic Poor W5SMM, Rick Muething KN6KZB, and Steve
Waterman K4CJX

Frequency Offset Acquisition and Tracking Algorithms, Part 1 and Part 2
By Mohamed K. Nezami

External Common Gateway Interface (CGI) Access to FindU
By Thomas M. Schaefer NY4I

Server Applications within APRS Internet Server Environment
By Thomas M. Schaefer NY4I

APRS and the TAPR EasyTrak Az/El Rotor Control System
By Keith Sproul WU2Z

APRS and Kenwood TM-D700 Voice Messaging
By Keith Sproul WU2Z and Mark Sproul KB2ICI

Internet Wide Callsign Database using LDAP
By Mark Sproul KB2ICI

Automatic Voice Relay System
By Bob Bruninga WB4APR



---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

32. [wxsig] Quality Checking of APRS wx data

```
From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 11 Sep 2000 20:23:32 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108836-2000.09.11-21.31.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

If you operate an APRS weather station and if the data reaches the Findu.com server, then it will be easy to check and monitor the quality of the data. I've made arrangements for APRS weather data to be routinely acquired and processed by the Quality Checking and Monitoring System (QCMS) in Boulder, CO which routinely performs quality checking of large amounts of surface data for the National Weather Service. Steve Dimse has written a Perl script that can assemble APRS weather data on his Findu.com server in Miami so that it can be transferred to Boulder every 15 minutes. The quality checking is done hourly. Anyone who would like to have their APRS weather data checked this way can sign up.

We've had some questions about how to calibrate barometers and I've answered that you should check with your local TV station and adjust to what they broadcast on the evening weather. If you participate in this QCMS activity for awhile, you will be able to call your local TV station and tell them just how far off their barometric pressure is.

Further information on the QCMS project is contained on this web page:

http://www-sdd.fsl.noaa.gov/MSAS/qcms.html

Go down to "Current QC Messages" and click on "Index" and you will see reference to APRS Wx Net Citizen Weather. Right now, there are two APRS weather stations, mine and Steve's, supplying data. Everything is all set up to acquire and quality check as much data as we can from up to 999 stations.

If you go further down the page to "Real-time Graphics" and click on "Index", you can look at the data and compare it to nearby data collected during the same hour. Select a variable like temperature and a region of the country. My site is named "ap001" and can be reached at the bottom under the Denver/Boulder.Ft.Collins region. Steve's site is named "ap002" and is located under the Southeast US Region. The APRS Wx Net data started being acquired operationally at 1900Z on Sept 11. So, anytime after that you should be able to see APRS wx data from ap001 and ap002.

If you would like to participate in the activity, send an e-mail to my work address

chadwick@fsl.noaa.gov

and in the subject line, put APRSWXNET and then your state, for example, APRSWXNET-CO for Colorado. In the body of the e-mail, I need your latitude and longitude in decimal degrees. Five places after the decimal point is more than needed by QCMS, but since we claim to be position reporters, let's show that we can report accurate positions. I also need your elevation above sea level in meters. This is important to get as accurate as possible. You should use a USGS topo map and read elevation as accurately as possible to the nearest meter. I also need your call sign and nearby town, land mark or other important feature. After I build the necessary meta-files (unfortunately a manual process), I will use those files to control Steve's Perl script and submit those files to the QCMS program. Then I will e-mail you and tell you what your "apxxx" designation is.

All discussion of this activity will be carried out on the TAPR [wxsig] reflector. Patty Miller, the project leader of the QCMS project, has joined [wxsig] and will be available to give correct answers to questions that I could only mumble about. This activity is open to anyone who collects and transmits weather data.

Russ
kb0tvj

33. [wxsig] Re: APRS modem for transmitting WX data

From: "Byon Garrabrant" <byon@mail.com>
Date: Mon, 11 Sep 2000 22:46:01 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108889-2000.09.12-00.53.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 10 Sep 00, at 3:03, Brian Short wrote:

> I have Peet Brothers units here, a U-100 and a U-800 and
> all similar models have a "packet" mode which sends out
> $ULT sentences every 5 minutes.

So, is the common way to use this station just connect it to a TNC
in UI converse mode, and let it TX every 5 min? Or is it used like a
GPS with a BLT type setting?

What baud rate is used?

> My vote (if you will) is support for the Peet Brothers packet
> format. The Peet Brothers FAQ details this format.

It seems to me that for most current wx transmission, the on the
air format is identical to the wx station serial output. Is this true?
Or, do the TNC's / software receive the station format and translate
it to another before sending?

Thanks,
Byon

_____
Byon Garrabrant N6BG byon@mail.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

34. [wxsig] Rain Gague

From: calfano <calfano@worldnet.att.net>
Date: Tue, 12 Sep 2000 06:59:26 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108900-2000.09.12-06.07.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

A question to the Masses.

After app. 24 hours of the T238 being on the air I loose my Rain Gauge.
I do notice a few errors on the temp. Sensor and one or two on the rain
gauge. Is this something new or has anyone else experienced this?

73
Charlie
[Attachment: calfano.vcf; text/x-vcard; 156 bytes]
[Attachment: smime.p7s; application/x-pkcs7-signature; 2,782 bytes]

35. [wxsig] Re: APRS modem for transmitting WX data

From: Steve Dimse K4HG <sdimse@netrox.net>
Date: Tue, 12 Sep 2000 13:20:43 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108955-2000.09.12-12.28.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 9/12/00 1:46 AM Byon Garrabrant (byon@mail.com) wrote:

>> I have Peet Brothers units here, a U-100 and a U-800 and
>> all similar models have a "packet" mode which sends out
>> $ULT sentences every 5 minutes.
>
>So, is the common way to use this station just connect it to a TNC
>in UI converse mode, and let it TX every 5 min? Or is it used like a
>GPS with a BLT type setting?
>
More often with BLT. Also, many people prefer the !! or Peet data logging
format. The advantage there is the data is sent every couple seconds.
With packet format, the data can be as much as 4:59 old when it is
transmitted.

>What baud rate is used?
>
2400 is used for Peet Bros equipment.

>> My vote (if you will) is support for the Peet Brothers packet
>> format. The Peet Brothers FAQ details this format.
>
>It seems to me that for most current wx transmission, the on the
>air format is identical to the wx station serial output. Is this true?
>Or, do the TNC's / software receive the station format and translate
>it to another before sending?
>
No, most goes through an APRS program, and is formatted into APRS weather
format. There are definite benefits to this. Neither of the Peet formats
gives all the data you'd want, like the three different rain value (1 hr,
24 hr, and midnight), 1 minute ave and gust speeds.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

36. [wxsig] Re: APRS modem for transmitting WX data

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 12 Sep 2000 12:57:10 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108960-2000.09.12-13.01.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve, my T238 sends data every 5 minutes but it is averaged for accuracy. What is the advantage of
sending data every few seconds? Isn't that a lot of radio traffic for instanteous readings?

>>> sdimse@netrox.net 09/12/00 12:20PM >>>
On 9/12/00 1:46 AM Byon Garrabrant (byon@mail.com) wrote:

>> I have Peet Brothers units here, a U-100 and a U-800 and

>> all similar models have a "packet" mode which sends out
>> $ULT sentences every 5 minutes.
>
>So, is the common way to use this station just connect it to a TNC
>in UI converse mode, and let it TX every 5 min? Or is it used like a
>GPS with a BLT type setting?
>
More often with BLT. Also, many people prefer the !! or Peet data logging
format. The advantage there is the data is sent every couple seconds.
With packet format, the data can be as much as 4:59 old when it is
transmitted....

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] Re: APRS modem for transmitting WX data

From: Steve Dimse K4HG <sdimse@netrox.net>
Date: Tue, 12 Sep 2000 14:59:24 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-108967-2000.09.12-14.06.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 9/12/00 1:57 PM Rich Beckwith (Rich@dps.state.mo.us) wrote:

>Steve, my T238 sends data every 5 minutes but it is averaged for accuracy.
> What is the advantage of sending data every few seconds? Isn't that a
>lot of radio traffic for instanteous readings?
>
The every few seconds is the rate it is sent from the weather station to
the TNC, not from the TNC to the radio.

There are two separate issues here. First, the original question was
about what "most" APRS wx stations do, and as good as the T238 is, it
isn't the most common one, and sadly never will be without a new source
of sensors. The way the T238 handles it is superior to the Peet, which
mostly transmits instaneous values, For example, the wind speed of the
$ULTW is one minute average, but the direction is instantaneous.

That is one of the aguments for using something between the Peet and the
TNC. My first Pic project was one that read the Peet complete format (300
bytes long) and did some housekeeping to provide better data. Only one
person is using this hardware though (one of my prototypes), w6ptk-3, a
mountaintop weather station in Northern California.

The second issue is latency. In the Peet, the $ULTW is sent once every 5
minutes. If it is run, like most people do (the original question), there
is no syncronization between when the wx station transmits the data to
the TNC and when the TNC puts it on the air.

So, say the weather station happens to be send the data at 13:21:10. The
TNC is looking for GPSHEAD $ULTW, when it see it it stores it in the GPS
beacon location. Then, the next time the TNC GPS timer expires, say
13:25:10, it gets sent, in this case 4 minutes late. Not a huge problem,
but an unnecessary error. It is possible to have most TNCs power up in
conv mode, but in this case you are hardwired to one packet every 5
minutes, so most people do not choose this option.

So, as far as the original question, none of the stand-alone options
(other than the T238) is optimum. The "best" (IMHO) way to do it is to
use intelligence between the wx station (sending frequent, raw data) and
the TNC. The T238 has this intelligence on board, but for everyone else
it means running some sort of APRS program between the TNC and Wx
station, or some sort of specialized processor like my WxPIC.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] Re: APRS modem for transmitting WX data

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Tue, 12 Sep 2000 22:43:08 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109002-2000.09.12-21.51.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

So lets hear about your WxPIC then Steve.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

> So, as far as the original question, none of the stand-alone options
> (other than the T238) is optimum. The "best" (IMHO) way to do it is to
> use intelligence between the wx station (sending frequent, raw data) and
> the TNC. The T238 has this intelligence on board, but for everyone else
> it means running some sort of APRS program between the TNC and Wx
> station, or some sort of specialized processor like my WxPIC.
>
> Steve K4HG
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] Re: APRS modem for transmitting WX data

From: Steve Dimse K4HG <sdimse@netrox.net>
Date: Wed, 13 Sep 2000 00:41:53 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109016-2000.09.12-23.49.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 9/12/00 10:43 PM Mark Phillips (g7ltt@g7ltt.com) wrote:

>So lets hear about your WxPIC then Steve.
>
That's a couple years old, see:

http://www.aprs.net/wx-pic.html

I hope no one gets too enthusiastic, the source code was lost when I
reformatted my PC laptop to dual boot Linux. This was written in C, only
a page long or so, but it would not be hard to modify my Pic-E weather
code (in assembler) to do the same thing, just remove the modem code and
send the data out a serial port.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Re: APRS modem for transmitting WX data

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Wed, 13 Sep 2000 06:56:01 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109068-2000.09.13-06.04.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Did you blow the security fuse? If not then could read out the compiled code
and then de-compile it.

Mark

----- Original Message -----
From: "Steve Dimse K4HG" <sdimse@netrox.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, September 13, 2000 12:41 AM
Subject: [wxsig] Re: APRS modem for transmitting WX data

> On 9/12/00 10:43 PM Mark Phillips (g7ltt@g7ltt.com) wrote:
>
> >So lets hear about your WxPIC then Steve.
> >
> That's a couple years old, see:

>
> http://www.aprs.net/wx-pic.html
>
> I hope no one gets too enthusiastic, the source code was lost when I
> reformatted my PC laptop to dual boot Linux. This was written in C, only
> a page long or so, but it would not be hard to modify my Pic-E weather
> code (in assembler) to do the same thing, just remove the modem code and
> send the data out a serial port.
>
> Steve K4HG
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] Re: APRS modem for transmitting WX data

From: Steve Dimse K4HG <sdimse@netrox.net>
Date: Wed, 13 Sep 2000 09:46:19 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109083-2000.09.13-08.55.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 9/13/00 6:56 AM Mark Phillips (g7ltt@g7ltt.com) wrote:

>Did you blow the security fuse? If not then could read out the compiled code
>and then de-compile it.
>
I could disassemble it, but that is very different than decompiling it.
Still, the only copy I know of is on a mountaintop in California.

Anyway, the Pic-E assembler code I wrote, and which is still available on
the TAPR web site, does all that the Wx-Pic does and more, it would be an
easy change to have it write the data serially.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] PIC as SLAVE on a 1-wire net?

From: Brooks Shera <ebs@lanl.gov>
Date: Fri, 15 Sep 2000 16:29:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109539-2000.09.15-17.35.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am interested in using a PIC interface as a slave device on a 1-wire
network with the master being something like a modified version of T238.
I am wondering if anyone has written, or knows of, PIC code that
implements the slave protocol?

A quick search of the net revealed only the code published in the Serial
Pic'n book which appears to be too primitive to coexist on a LAN with
standard Dallas Semi slave devices.

Any suggestions would be appreciated.

Brooks

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] RE: Rain Gauge

From: William Beals <will@beals5.com>
Date: Fri, 15 Sep 2000 19:15:20 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "'wxsig (TAPR)'" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109563-2000.09.15-20.31.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Charlie:

I did see your post a couple days ago. I waited responding to see if anyone else said they had a similar problem. As we both saw, no responces. With hindsight I should have told you I was doing that on purpose rather than letting you think you were abandoned, sorry.

I certainly havn't seen this problem myself and I can't think of a really good reason why 24 hours would be so magical. Is there anything in your RF setup that happens every 24 hours? The high presence of RF is of interest, but my only known problems were when I had a wire-wrapped board and no ferrites on any incoming or outgoing signals. Even with that, I am pretty sure my problem was RF getting into my external (non-ham-optimized) power supply. I suspect it was dirty power. If you can, a VERY good experiment would be to go through the pain of shutting down (or lowering the power) on some of your RF stuff to see if that affects the problem.

If you have a wall-wart to run the T238 with as an experiment, that will give you hints on dirty power or not. As a cheap shielding experiment you can first wrap the board in plastic (a ziplock bag is good) and then wrap a bunch of tin foil around the bag. Hopefully the plastic bag will be a good shield against shorts by the tin foil (no laibility here--BE CAREFUL!!)

When you said the Wx station ran fine with the software, I assume you are referring to the Dallas PC software. I would suggest trying again on the PC for a day or two to confirm it wasn't something on the sensor that may have gone south around the swap time. That will certainly isolate it to the T238 and its environment if the swap back to the PC shows no problems. There is little in the software that does a lot on a 24-hour basis.

The fact that the rain display goes to dashes implies constant errors or forgetting the fact that a rain sensor is out there. Is the rain error continuously counting when you get the dashes? Have you tried just cycling power instead of re-detecting the rain guage. The software does very different things and that would give me a good hint as to where to look for problems.

Finally, do you have an oscilloscope? It would be very nice to look at the 1-wire waveform and see if the signal is barely OK. Russ ran into a problem where a sensor unit was bad and dragging down the 1-wire bus. Alas the Dallas interface is more tolerant of the fault condition than the T238, so as the bus degraded it worked with the Dallas interface but not with the T238. The sensor was definitely bad and needed replacing, but it initially only showed up on the T238 so we were thinking it was a T238 problem for quite a while. If you don't have an oscilloscope, try looking at the voltage with a voltmeter. In general you should see 5-8-5.0 volts with an occasiona dip to something "less". If the normal voltage is anything less than 4.5Volts, then you may have a sensor problem. The multimeter isn't too great as you are measuring a dynamic bus with something intended to measure DC voltages, but at least it may give you a hint.

Hope this helps. Please let me (and the sig) know what you find.

will

-----Original Message-----
From: calfano [SMTP:calfano@worldnet.att.net]
Sent: Friday, September 15, 2000 5:09 AM
To: will@beals5.com
Subject: Rain Gauge

Need Info,

        I tried the SIG and got no response so now I try the professor. I have a Rain gauge on my 238. After approximately 24 hrs. there is no rain display [i.e. -- in display].
I re-detect the unit it runs for another day. There are 1 or 2 errors for the gauge and the temp sensor every time it quits.
        The wex station ran fro 2 months with the software. My questions is the unit prone to RF? It is 10" from a 150w 6 meter amp. and 10" from the 40w aprs digi. All the units are on the same Astron 70 amp supply so it could be power. Have you any Ideas?? Other then this problem it works great.

73
Charlie
WA2GUG << File: calfano.vcf >> << File: smime.p7s >>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] RE: Weather Station

From: William Beals <will@beals5.com>
Date: Fri, 15 Sep 2000 19:16:06 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "'wxsig (TAPR)'" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109564-2000.09.15-20.31.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Cary:

(I'm copying the TAPR wxsig reflector as well)

Thr T238 was primarily designed to NOT need an internet link to work. The general idea was to broadcast your weather via APRS and hopefully have a local igate that will pick up the data and put it on the internet for your. A 24/7 connection for your data that does not cost anything or take up a lot of power (I estimate a regular computer uses about $10/month in electricity if on 24/7).

Having said that, there is no reason you have to use the station in its primary intent. The real job of the T238 is to get raw data from the cheap Dallas weather station electronics, process it, display it, and send it out on a UART. The destination can be either a TNC or computer (or mabye something else, who knows).

Beyond the firmware that processes the 1-wire weather data and sends it out to the TNC, I am using other peoples software. I send the data out my TNC, the data gets relayed from here in Denver to an igate in Colorado springs and goes to the APRServe server in Miami. The findu.com website gets the data from the APRServe server and displays nice pictures. There is lots of good stuff out there that I just take advantage of, the T238 just supplies the data to the network.

The T238 can also be hooked up to a computer. One of the UART modes emulates a Peet Bros format, so if you have some freeware that interprets that format, the T238 will supply the data.

To set up a T238 you will need the kit and a weather station. The latter is the hard part. Dallas discontinued the weather station about 6 weeks ago. I am confident that someone will come up with a replacment weather station soon, either commercially or as a home project. The cost of the Dallas sensor unit was $80 plus $60 for the rain guage. The T238 kit is about $120. You get a very nice system for a bit over $200, less than half of any of the commercial solutions.

The firmware for the T238 is on the beals5.com website for your viewing enjoyment.

Hopefully that answers some of your questions. I'll be happy to answer others.

will

-----Original Message-----
From: Selden, Cary [SMTP:cselden@coastcom.com]
Sent: Thursday, September 14, 2000 1:41 PM
To: 'will@beals5.com'
Subject: Weather Station

Hi Will:

A friend passed along the web address for the inexpensive weather station and ultimately I got to your email. The weather station, particularly the web aplication, appears to be just what the doctor ordered.

However, I am a bit overwhelmed as to what exactly is required and whathooks

to what. I currently have a phone line, ISP and a method of FTP-ing files,
I jsut need something to send.

I saw the web site of N0XGA. What is there seems like it will do for me
what I need.

Can or will you send me a list of big pieces? Is the software availble?

Cary

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] RE: PIC as SLAVE on a 1-wire net?

From: William Beals <will@beals5.com>
Date: Fri, 15 Sep 2000 19:28:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109565-2000.09.15-20.31.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brooks:

I have been wanting to do something similar. When Dallas quit making the
outdoor unit I wanted to do another one but put a bit of intelligence out
at the sensor unit. That intelligence was intended to get something better
than the 22.5 degree resolution on wind speed the sensor has. Alas I
couldn't come up with a decent way of doing it with a little micro.

Here were the tricky bits I ran into.

1) There is no way you could power the micro from the 1-wire bus, you would
need a power line. Three wires by my count, two by Dallas's count (they
don't count ground for some reason :-)).

2) Nasty timing. The 1-wire bus bits are basically sent using pulse width
modulation. The short pulses are REALLY short and the slave device is
expected to respond to a pulse from the master lasting less than 1us and be
expected to hold that line low if it wants to send back a '0' bit. This
probably would be possible with a little micro, but it would not be able to
do anything else, it would need to be in a dedicated polling loop and even
then 1us reponse times are not easy. I figured at a minimum there would
need to be some helper electronics outside the micro for the lowest level
of the interface. The basic bit time is 60us which is pretty tough on a
slave micro too. BTW: This kind of interface is OK for a micro to be a
master for as it is in control of all the timing and in my case I am in a
tight timing loop on the T238. As the master though, I only need to be in
that loop when I and sending/requesting data. A slave on the bus would
need to be monitoring the bus all the time, not so pretty.

If you can live with the first problem (no solutions there), the second
problem could be solved but would almost certainly require extra circuitry
outside the micro and would not be a pure software project. I suspect that
may be why you have not found anything referenced yet.

will

-----Original Message-----
From: Brooks Shera [SMTP:ebs@lanl.gov]
Sent: Friday, September 15, 2000 4:30 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] PIC as SLAVE on a 1-wire net?

I am interested in using a PIC interface as a slave device on a 1-wire
network with the master being something like a modified version of T238.
I am wondering if anyone has written, or knows of, PIC code that
implements the slave protocol?

A quick search of the net revealed only the code published in the Serial
Pic'n book which appears to be too primitive to coexist on a LAN with
standard Dallas Semi slave devices.

Any suggestions would be appreciated.

Brooks

You are currently subscribed to wxsig as: wmbeals@compuserve.com

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(BD!`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`K````4D4Z(%MW>'-I
M9UT@4$E#("!A<R!33$%612!O;B!A(#$M=VER92!N970_`-\,`06 `P`.````
MT <)``\`$P`<`!H`!0`]`0$@@ ,`#@```- '"0`/`!,`$ `G``4`/@$!"8 !
M`"$````V.3E!-#<U13,W.$)$-#$Q03@U-C P,#!%.#E",T,P.0``!P$#D 8`
M# L``"$````+``(``0````L`(P```````P`F```````+`"D```````,`+@``
M`````P`V``````! `#D`0.8,:7T?P $>`' ``0```"L```!213H@6W=X<VEG
M72!024,@(&%S(%-,059%(&]N(&$@,2UW:7)E(&YE=#\```(!<0`!````%@``
M``' 'WUI#%Y'FFJ+-Q'4J%8``.B;/ D``!X`'@P!````!0```%--5% `````
M'@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A"FPK1.`P`'$&4(```>
M``@0`0```&4```!"4D]/2U,Z24A!5D5"145.5T%.5$E.1U1/1$]33TU%5$A)
M3D=324U)3$%25TA%3D1!3$Q!4U%5251-04M)3D=42$5/551$3T]254Y)5$E7
M04Y414143T1/04Y/5$A%4D].14)5``````(!"1 !````X@<``-X```"8# ``
M3%I&=0(LP&<_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/
MYGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V! ;F<Q
M,#,S"Z8@PD(#8&]K<SH*H@J$"0J 22 /<'9E(&(I">$@=P!P= N 9R#0=&\@
M9!EP<P-P#[ V:!DB`)!M`Q *P"X@Z"!7:!BQ1 = "V $(/AQ=6D%0 # %+$9
M01L0VB (8'09D 6Q=0,`!4#?&" 8X@F &54`<&\<@07 IP(@&'$<T"!P'U%A
M&(!Q&^%O9B +@!W@&W!I^F<)\&,<HQYP!4 <@@^@]P" '14:T50/< 5 (%L8
MX/\$("!2%- =]"# !4 9R!B0'P) 'M$:``.1'((R,B[J-1F 90G"( EP&< *
M0+\9$ (@'O$8T!3!&;!P">#7'@$AJ ]P<QK101N"&"#!!:!U;&1N)P5 !:#[
M!X =,' H01H``[$%@0GP^P5 &.!Y(!(9D!DB&^$KE;L@H ) ;!AP&H %`&\:
MT;T7:D@$D".Q+Z(<@G0%$-QC:RR0'^$J0G(#D2!1<RZ0%VHQ*2*A+Z($`""[
M'I L8WD(8"IT'W!O+^&;'',N4R #4AQS,2T#\-,OL1] <RPSPW<T(Q\0_QWQ
M'\ T=""@'Q B@R<R-B+U!"!B+)!M+) J@0(P-J!N=#<`.5(;5"<$(#G#(/XH
M'($LD!F0*M0[4@G .=%_'@`"$ 7 &<(G81N0)_$ZJBTRL"DQVS(RL$X;D/YT
M+) 9$!J %@`B@S7J,-3_"L 8<1N0+F ;82R0(=$%0+<V@!DB'X!L#Z H060K
ML9\$82J@(6 GX4 U<V@)$0-#)$&$4D5!3$Q9_T3U`' HY0M@&&$!`!1P(/'I
M,S%E>"BP8QWE)W$T</]&\AYA0R4U=P# /Y X`C^![QDB+B $$28C,4$A1N(8
MD/](6T40-$$F(05 .#(MT#2 _R! (#$L4@(P3 $9H21!0='C,* ?L2<P)Q_2
M(H,S,?T1,&]!X )@+) W!$SQ-'#]!!!I`F XXBV?-J ?0BU"OS<4'J!,XE'Q
M,!$>-7D:!/\@@ ^@-J!4^"C#.E$S$0.@_2OB9$(1'>(T<""12Z(7$/\K<$;B
M1] 8L1R!3%0)<$E1WT-A/]%%I56"/<%Y&M$8('YF(+ (<#>"'Z(_\0=P==\U
MHR^R5]X]8QL0;"BP!<#O((!(D0-@`P!C!" <P0"0_P$`-,H%L1R"3M$'D$YA
M6M'/`R @(1R"(%)R9@#0.&1/0<4?TUPR,R(V,$$A=W\:$ ]@,R(1,"7!/[$(
M8&=_*\ G\1_ 1V0U%!E@+I)"^%17.E%%%+(@%F4#,R+\3TL]$UY2:615LTK6
M;#/_(_$BX2/R*G$", -@9#,;8?\P)#_C1M-8T3F2&Y 8<!@@_F$UH%C3&1!H
M8&9#6@<G\>$<@E0R,S@IXDP"2L?_&@!H0C:@&" "($)16"Q.-']:4F<P&+%Q
M<2AR)$$9(2^O"7 ;P&.Q&2)D(6!A*>+_1U5S-4$27U\$8!U1!; <1G]!$F^9
M5V%5@AG 9[4QVTG_(# STP.1(* 882N3'()=H-\/D!]A4<$N(#6@*#-A)Y;[
M=",)<"DZ$2&C;N$T48&E^S048#-L&&!,T1]1-P0'0/\$8&/!(/ `( MQ0E%X
MDC8R5TA@,' ?P&,V,&,;T7+_+)%A_T;B52P?<2^Q&< !@+<8X"^Q4;%J2)%=
M4W,V@-](@DXD`, PP2.Q:#.T&$/?58("$#SB5J<)<&8OH2#A_1X`>0^P,=L#
M\!MP%VH*]/T@H#-FX!61`4!1L1W@2*"A$'0Q-B ME+)/!1#>9PN !T %T$OA
M82# E+,?%V:3Q).1"Q.3QFDM,8PT- % (* Q.# !0.,,T)A38B!&`V$74 R2
M'F(6U@8``L$?P%M338!44#IE8G- %>' ;"YG;W9=%V69@/\&8 (PF>>9H$.@
M+( VH 9@SP4P@> 8D 7 ,34VH '0(9C@(#0Z,P_04$T)G'=4;YGG5$%04OT:
M\%@&`$B!!S$=@&328[+*1SS!<)QX=6*,,IGG2%MW> "09UV?P$D&0QK@&Y%3
M3$%61>=HA#8%'Q!T/Y9?EVJ3%/\+MA=S+L5Q=:)4'?%8T4+4_Q_ I2)K.!N1
M:,9'Q:8*%V3[IL$W`')0@("G2N48D!HC^QG7(*!K;3,$< :0") >`/\88 ^0
M)^,@,'.EJADW`"11_WQ33Q%6H1\"*;$8T 40)=%6;C:@!;%K'I!W8<%F_S:@
MI2(%H&(S(6$79 =P"U#?@> L,70D1V23LF\(X:;W_Q>">; ;P5!Q#Z *P&=A
M9%7_IL$G81A@!T =\763'(*WL_\?@ )@! `;$'"C'((&8I5A]1=D4"Y@)P.@
M!N 7(&<E_&%P*+ /@5AE::%1H1IQ_QD0&&$9806@2& $`" !6.+]I;!.*X07
M9#^01N$+$1M&?P9@&H!'6RG0NIM6L(RQ9_\@P$MQ@K)21\%1"7"AX1WA[S';
M%O07:I8G63/A0:*(8/YRD$$N$,@2F[ %`1B0'@/WI+-N$6HP=YZA!T";P"L1
MZQ^ #Z!R&& N*Q$79*" _QTQS==/]!_!%>%0@('@"W!_;[$9<"X@&%$V$*3"
MF$ U\#<P-TV;T,.!*= !D+41,"X%L&<7:A'Q`-9P```&`! 0``````,`$1 `
M`````P" $/____] ``<PX..LPWL?P % ``@PX..LPWL?P $+``" "" &````
M``# ````````1@`````#A0````````,``H (( 8``````, ```````!&````
M`!"%`````````P`%@ @@!@``````P ```````$8`````4H4``+<-```#``F
M"" &``````# ````````1@`````!A0```````!X`(H (( 8``````, `````
M``!&`````%2%```!````! ```#@N, `+`": "" &``````# ````````1@``
M```.A0````````,`)X (( 8``````, ```````!&`````!&%`````````P`I
M@ @@!@``````P ```````$8`````&(4````````>`#B "" &``````# ````
```

```
M````1@`````VA0```0````$`````````'@`Y@ @@!@`````P ```````$8`
M````-X4```$````!`````````!X`.H (( 8``````, ```````!&`````#B%
L```!`````0`````````>`#T``0````4```!213H@``````,`#33]-P``"TB%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

46. [wxsig] Re: PIC as SLAVE on a 1-wire net?

From: "john e mclemore" <turkey2@frontiernet.net>
Date: Sat, 16 Sep 2000 06:39:10 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109613-2000.09.16-06.48.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

hi,sending dc out the two wires takes some "jury rig" but no problem. why
not use a AD converter at each wx instrument each with its own baud rate? it
would be a real nightmare to use anyother system with the tex encode/decode
without knowing the medthod...73,john
----- Original Message -----
From: "Brooks Shera" <ebs@lanl.gov>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: September 15, 2000 17:29
Subject: [wxsig] PIC as SLAVE on a 1-wire net?

> I am interested in using a PIC interface as a slave device on a 1-wire
> network with the master being something like a modified version of T238.
> I am wondering if anyone has written, or knows of, PIC code that
> implements the slave protocol?
>
> A quick search of the net revealed only the code published in the Serial
> Pic'n book which appears to be too primitive to coexist on a LAN with
> standard Dallas Semi slave devices.
>
> Any suggestions would be appreciated.
>
> Brooks
>
> ---
> You are currently subscribed to wxsig as: turkey2@frontiernet.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

47. [wxsig] Re: PIC as SLAVE on a 1-wire net?

From: William Beals <will@beals5.com>
Date: Sat, 16 Sep 2000 07:48:14 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109625-2000.09.16-08.50.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

I agree, if I were starting from scratch I'd have chosen something
different. The Dallas-based sensor unit was to compelling to ignore
though.

will

-----Original Message-----
From: john e mclemore [SMTP:turkey2@frontiernet.net]
Sent: Saturday, September 16, 2000 5:39 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: PIC as SLAVE on a 1-wire net?

hi,sending dc out the two wires takes some "jury rig" but no problem. why
not use a AD converter at each wx instrument each with its own baud rate?
it
would be a real nightmare to use anyother system with the tex encode/decode

without knowing the medthod...73,john

```
begin 600 WINMAIL.DAT
M>)\^(@\-`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G`````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`O````4D4Z(%MW>'-I
M9UT@4F4Z(%!)0R @87,@4TQ!5D4@;VX@82 Q+7=I<F4@;F5T/P#P#0$%@ ,`
M#@```- '"0`0``<`, `.``8`.P$!(( #``X```#0!PD`$ `'`"\`# `&`#@!
M`0F `0`A````,T$Q-C$S1$1!-#A"1#0Q,4$X-38P,# P13@Y0C-#,#D`"P<!
M`Y &`$P&```A````"P`"``$````+`",````````,`)@``````"P`I````````#
M``"X````````,`-@``````0 `Y`,"T>L+D'\ !'@!P``$````O````4D4Z(%MW
M>'-I9UT@4F4Z(%!)0R @87,@4TQ!5D4@;VX@82 Q+7=I<F4@;F5T/P```@%Q
M``$````6``````< ?Y,)SW1,6.XND$=2H5@``Z)L\"0```'@`>#  $````%`````
M4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&$'L-"DT#
M``<0`@(``!X`"! !````90```$I/2$XZ24%'4D5%+$E&25=%4D535$%25$E.
M1T923TU30U)!5$-(241(059%0TA/4T5.4T]-151(24Y'1$E&1D5214Y45$A%
M1$%,3$%3+4)!4T5$4T5.4T]254Y)5%=!4U1/0T\``````@$)$ $````@`P``
M' ,``!,$``!,6D9U&)1C7S\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"@T,`
M4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@8P!0"P-C
M`$$+8$!N9S$P,S,+IB#@2F]H;CH*H@J$"H!(22!A"<(L( :0(,48`'<$D&4@
M<P&0`" Y"X!G( -2&2 %`&%THP]@&+ G9" /<'89$&T/8&\/H .@<P-P#[!H
M-1F"9 :09ACQ`C N(&@@5&@9$$0'0 M@<_PM8AUP"8 9( GP&Y %P!9U`P`%
M0'<=<"!T;W,;$ -P<&4=4!F"'P%I/&=N!; 9$!O0"&!G:'XN%TH#\!U0%TH*
M]!^0,YXV`4 5H % $3!O= 600G00=#$V("TDLD^]!1!G"X '0 70!Y!S&"!^
M922S%T8CQ".1"Q,CQFDP+3$T- % 'Y Q.(XP`4 ,T"A38B!&`V&K%S ,DF(/
MT&H7`2 9$#!M8VQE!& 9`5M3($U44#IT"'!K9;AY,D #40(P")%N#[#Z+BS1
M71=%*8 &8 (P*>?C!A KT61A>1AP!F %,/4K$&($D" D@!AP`= HX* @-3HS
M.0_@32U7!%1O*>=405!2(.Q76 8`'V!C!S$8L (PDQCQ&3 @1P-@=7 M6!AU
M8FHC\2GG6W=X"0"09UT'\&4Z(% ,24,<T![14TQ!5MQ%( (@&! OX"T#\!D!
M_2S1/R9?)VHC% NV%U,*X[L*@!O@+!M1'# <`F,W,.YU!4 ;T"!A=Q\0-[(>
MX8YA+ `$(!N2(")J"'#$>2 E$2(@8CRA(# >(".Q`F K$!S =VAY-Q=$(# %
M0'4/H#=A043]'R%N&O `("_!&D JL #0CQIP-; 8@ " =')U!X _`C!"-1Z0
M&G >D 0@;W>;`Z =H'4:L!HQ93]$`?LA50A@;!JP+[ W80EP)6%[`P`@P'0`
MP"!2'Q! XV[.>2/0'0`%P'-Y&3 K$'M#M#S394*@"? %H $`+]\%@@$`(58@
M@@5 :R P`_"7'[(=`0> 9""!9"Y,@+@W,RPJ<A=*$?$`3B #`! 0``````,`
M$1 ``````P" $/____] ``<PX+:^G>0?P % ``@PX+:^G>0?P $+``" "" &
M``````# ````````1@`````#A0````````,``H (( 8``````, `````````!&
M`````!"%`````````P`%@ @@!@`````P ```````$8`````4H4``+<-```#
M``F "" &`````# ````````1@`````!A0```````!X`(H (( 8``````, `
M``````!&`````%2%```!````! ```#@N, `+`": "" &``````# ````````
M1@`````.A0````````,`)X (( 8``````, ```````!&`````!&%````````
M`P`I@ @@!@`````P ```````$8`````&(4`````````>`#B "" &``````#
M````````1@`````VA0```0````$`````````'@`Y@ @@!@`````P ``````
M`$8`````-X4```$````!`````````!X`.H (( 8``````, ```````!&````
M`#B%```!`````0`````````>`#T``0````4```!213H@``````,`#33]-P``
"2V*%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

48. [wxsig] RE: Weather Station

From: "Scott, Herb" <h-scott@ti.com>
Date: Mon, 18 Sep 2000 11:14:48 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109950-2000.09.18-11.22.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve and SIG, Replacement of the display corrected the problem. The T-238
is works great!

Thanks.

 73, Herb WR5V

-----Original Message-----
From: Steven R. Bible [mailto:srbible@gate.net]
Sent: Wednesday, September 06, 2000 10:32 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Weather Station

Russ,

I think Herb's description of turning up the contrast a good indication that the LCD is bad. I will send him a replacement LCD.

- Steve

-----Original Message-----
From: bounce-wxsig-15059@lists.tapr.org
[mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Russ Chadwick
Sent: Wednesday, September 06, 2000 10:55 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Weather Station

Herb,

One suggestion is to reverse the flat ribbon cable at both ends. If the display is different after the reversal, then I would suspect the ribbon cable. Another suggestion is to look closely (with a magnifying glass) at the solder on the 1X14 header that leads to the display. I don't know if solder bridges could cause your problem or not, but it's easy to check.

Russ
kb0tvj

----- Original Message -----
From: Scott, Herb <mailto:h-scott@ti.com>
To: TAPR WX <mailto:wxsig@lists.tapr.org> Special Interest Group
Cc: Dorothy Jones, KA5DWR <mailto:ka5dwr@tapr.org> ; TAPR WX
<mailto:wxsig@lists.tapr.org> Special Interest Group
Sent: Wednesday, September 06, 2000 10:32 AM
Subject: [wxsig] RE: Weather Station

Steve,
I open to suggestions. From what I can tell, the problem appears to be with the display itself. The T-238 responds to the menu/sel/up/down. Normally you can adjust the V1 bias and each character will display darkened segments. The first row is blank (some random segment darken) and the first segment of the first character in the 2nd row is blank.

I'm confident the wiring connections are correct to the schematic.

I'd like to obtain a replacement display.

Thanks,
Herb Scott WR5V

-----Original Message-----
From: Steven R. Bible [mailto:srbible@gate.net <mailto:srbible@gate.net>]
Sent: Wednesday, September 06, 2000 9:03 AM
To: Scott, Herb
Cc: Dorothy Jones, KA5DWR
Subject: RE: Weather Station

Hello Herb,

Dorothy tells me you are having problems with your T-238. If 3 of the 4 lines are working, I am not certain if it could be a faulty LCD, wiring problem, or programming of the microcontroller.

If you could join the WXSIG list, there all the builders of the T-238 are online discussing it. We can discuss your problem with a lot of knowledgeable people and get you fixed. If there is a bad part, TAPR will replace it for you.

Please let me know what you would like to do.

 - Steve, N7HPR
   n7hpr@tapr.org

49. [wxsig] Final Update - DCC Orlando, FL Sep 22-24, 2000

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 18 Sep 2000 12:33:39 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-109953-2000.09.18-11.42.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

19th Annual ARRL/TAPR Digital Communications Conference
Orlando, FL September 22-24, 2000

** Final Update 9/18/2000 **

Counting down the final days until the 19th Annual ARRL/TAPR Digital
Communications Conference this weekend in Orlando, Florida. For detailed
information about the conference, please visit the official DCC web page at
http:www.tapr.org/dcc.

Registration for the conference will be taken at the door. Friday
registration is for an entire afternoon APRS activities, demonstrations, and
presentations. Saturday registration includes conference proceedings,
lunch, and a full day of presentations. Saturday night includes Banquet,
dinner speaker, and prize drawing. Sunday registration is for the PICmicro
Design seminar.

DCC Social:
Please join us Friday evening at 7:00 PM for a social get together time.
The social is generously hosted by the Packet Radio Users Group of Japan
(PRUG).

PRUG Presentation:
Friday night the Packet Radio Users Group of Japan will present talks on
their progress on high-speed digital networks in Japan.

Saturday Night Banquet Speaker:
Mr. Doug Campbell, of Triton Network Systems (http://www.triton-network.com)
will be our DCC Banquet Speaker. Triton Network Systems is located in
Orlando, Florida.

Vice President Product Management, Marketing, & International Business as
Vice President of International Sales, Marketing and Product Management, Mr.
Campbell leads the assessment of global community needs and spearheads the
development of Triton Network Systems' product and marketing strategies.

Mr. Campbell cultivated his management skills in sales, marketing and
product development working 17 years for Nortel Networks. While based in
Singapore, he built a multifunctional pan-Asian team, which successfully
captured a 100% market share with MCI-WorldCom Asia, successfully
introducing a number of new products. Prior to this, Mr. Campbell was
instrumental in the establishment of an SDH broadband equipment joint
venture in China and served as a member of the company's Board of Directors.

Mr. Campbell received a Bachelor of Engineering Physics degree from the
Royal Military College of Canada in Kingston, Canada, and a Master of
Business Administration from IMD (University of Lausanne) in Switzerland.

Banquet Prize Drawings:
Grand Prize Kenwood TM-D700A (donated by Kenwood)
2nd Grand Prize Palm VII Personal Digital Assistant (donated by TAPR)
Two Motorola Oncore M12 GPS Evaluation Kits (donated by Synergy Systems,
LLC)
Microchip PICSTART-PLUS PICmicro Programmer (donated by Microchip)

PIC Seminar Prize Drawing
Microchip MPLAB-ICD (donated by Microchip)

Project and Demonstration Room:
The DCC is a place where people can talk about their projects and gain ideas
for new ones. The Project and Demonstration Room has become a recent DCC
tradition where people can bring and display their projects. The room will
be located next to the registration room and across the hall from the main
presentation room. The Project and Demonstration Room will open at
registration time and be closed (locked) 11:00 PM Friday and Saturday night.

Map and coordinates:

A map of the conference hotel and coordinates are available at
ftp://ftp.tapr.org/dcc/2000.dcc.hotel.map.pdf

Speakers:
The following is a list of presenters. PDF version available from
ftp://ftp.tapr.org/dcc/2000.dcc.speakers.pdf

Speaking schedule (subject to change) is available from
ftp://ftp.tapr.org/dcc/2000.dcc.schedule.pdf

APRS Seminar - Friday September 22, 2000

John Ackerman, N9UR	APRS WG
Steve Bible, N7HPR	T-238 Weather Station
John Blowsky, KB2SCS	APRS LOOKUP
Bob Bruninga, WB4APR	APRSdos, satellite, etc.
Steve Dimse, K4HG	Internet APRS
Walter Dunckel, KD6VYV	Serial Control of D7/D700
John Hansen, W2FS	KISS TNC, D700 Keyboard
Dale Huguley, KG5QD	Weather Server
Larry Gahagan, AB0JM	Wildfire Support
Byon Garranrant, N6BG	TinyTrack
Mike Musick, N0QBF	PalmAPRS/Tracker construction
Robert Osband, N4SCY	Public Service with APRS
Tom Schaefer, NY4I	APRS Email Gateway
Darryl Smith, VK2TDS	APRS in the 2000 Olympics
The Sprouls, WU2Z/KB2ICI	Mac/Win/XAPRS
Rob Wittner, KZ5RW	APRS-CE

Main Session, Paper Presentation - Saturday 23, 2000
Titles and abstracts are available at
http://www.tapr.org/tapr/html/Fcnc19.html

EasyTrak, A PIC Based Rotor/Radio Controller Interface
By Steve Bible N7HPR

APRS Tiny Web Pages
By Bob Bruninga WB4APR

Channel Capacity Simulation of Peer-to-Peer Spread Spectrum Satellite
Transponders
By Matthew Ettus N2MJI

Correlation for Direct Sequence Spread Spectrum
By Panagiotis Gavalas

PIC-et Radio II: How to Receive AX.25 UI Frames Using Inexpensive PIC
Microcontrollers
By John A. Hansen W2FS

Winlink 2000 ...A Global Ham Message Transfer and Deliver Network
By Hans Kessler N8PGR, Vic Poor W5SMM, Rick Muething KN6KZB, and Steve
Waterman K4CJX

Frequency Offset Acquisition and Tracking Algorithms, Part 1 and Part 2
By Mohamed K. Nezami

APRS and the TAPR EasyTrak Az/El Rotor Control System
By Keith Sproul WU2Z

APRS and Kenwood TM-D700 Voice Messaging
By Keith Sproul WU2Z and Mark Sproul KB2ICI

Internet Wide Callsign Database using LDAP
By Mark Sproul KB2ICI

Automatic Voice Relay System
By Bob Bruninga WB4APR

Introductory Sessions - Saturday 23, 2000

Intro to Packet Radio
By John Ackerman, N8UR

Intro to APRS
By Guy Story, KC5QOI

Intro to Digital Satellites
By Barry Baines, WD4ASW

Into to HF Digital
TBD

Intro to Software Defined Radios
By Steve Bible, N7HPR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] APRSWXNET status

From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 18 Sep 2000 19:38:14 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110028-2000.09.18-20.46.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This morning at 1500Z, APRSWXNET was expanded to six stations. The quality checking results are available at

http://www-sdd.fsl.noaa.gov/MSAS/qcms.html

The qst (questionable) observation results appear under QC summary. Occasional questionable observations are entirely normal as the weather model is not perfect. However, numerous and frequent questionable observations might indicate a problem. Note that there are a number of errors in potential temperature for my weather station (ap001). I think that this might be an error in my elevation. I've corrected the elevation and will watch over the next few weeks to see if the percentage of questionable errors decreases.

GIF maps of the obs and locations are given under "real time graphics" and if your station is "in the clear", you will be able to compare your observations with other observations from nearby stations.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] DS1994 Installation Problems

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 19 Sep 2000 09:38:00 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110115-2000.09.19-09.43.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I upgraded my firmware to 1.10 but am unsure how to connect my DS1994. I noticed the I-Button holder has "+" on the top, but it appears from the placement of the DS1994 and its schematic that this is backwards. I have tried hooking up the "top" of the button to the 1-wire bus at J6 pin 14, and the "can" to ground. Is this right?

Will, is there anything in the firmware that will tell me if the T238 sees the DS1994?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Re: APRSWXNET status

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Tue, 19 Sep 2000 10:53:35 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110151-2000.09.19-11.00.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ, I cant find ap006. Also, since my wx station is reporting 99 mph, I guess I shoud see some errors as well. I'll have to figure out the "99" mph problem later. I should be showing up in central Missouri, between KJEF and KCOU, and may be looking at the wrong maps.

>This morning at 1500Z, APRSWXNET was expanded to six stations. The quality
>checking results are available at
>
>http://www-sdd.fsl.noaa.gov/MSAS/qcms.html
>
>The qst (questionable) observation results appear under QC summary.
>Occasional questionable observations are entirely normal as the weather
>model is not perfect. However, numerous and frequent questionable
>observations might indicate a problem. Note that there are a number of
>errors in potential temperature for my weather station (ap001). I think
>that this might be an error in my elevation. I've corrected the elevation
>and will watch over the next few weeks to see if the percentage of
>questionable errors decreases.
>
>GIF maps of the obs and locations are given under "real time graphics" and
>if your station is "in the clear", you will be able to compare your
>observations with other observations from nearby stations.
>
>Russ
>kb0tvj
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Rain Gauge

From: Ron Walther <rascal@azstarnet.com>
Date: Tue, 19 Sep 2000 08:55:08 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110152-2000.09.19-11.02.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi folks;

Would anyone know where I could find the calibration instructions for
1-wire rain gauge..??..I've
seemed to have lost the one I had and can't find the URL where I might find
it..

Tnx in advance

Ron -- W7AI

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Re: Rain Gauge

From: Anson Mount <amount@execpc.com>
Date: Tue, 19 Sep 2000 12:55:00 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110160-2000.09.19-13.03.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ron,

Go to the iButton.com website and click on the weather station link. There you
will find the directions for the calibration. Basically you have to drip 16
ozs. of water thru the unit and get 100 tips or counts with it. Raising the
screw height makes the bucket tip sooner, hence more counts.

Good luck!   Anson Mount / N9RJX

Ron Walther wrote:

> Hi folks;
>
> Would anyone know where I could find the calibration instructions for
> 1-wire rain gauge..??..I've

> seemed to have lost the one I had and can't find the URL where I might find
> it..
>
> Tnx in advance
>
> Ron -- W7AI
>
> ---
> You are currently subscribed to wxsig as: amount@execpc.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] Re: DS1994 Installation Problems

From: Doug <dbuhrman@radiks.net>
Date: Tue, 19 Sep 2000 17:27:51 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110180-2000.09.19-17.35.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich Beckwith wrote:

> I upgraded my firmware to 1.10 but am unsure how to connect my DS1994. I noticed the I-Button holder has "+" on the top, but it appears from the placement of the DS1994 and its schematic that this is backwards. I have tried hooking up the "top" of the button to the 1-wire bus at J6 pin 14, and the "can" to ground. Is this right?
>
> Will, is there anything in the firmware that will tell me if the T238 sees the DS1994?
>

Rich:
I installed the DS1994 can in one of my boards and yes the "+" goes to the top of the can. The body is the common. Once the unit is powered-up it will give a message that the 1994 was found and that it is setting the clock from it. Have you noticed the problem I've stated below?

Will:
I noticed on the ver1.10 software that when I lose power to the board and then power it back up that the rain gauge info is lost. It shows dashed lines in the current display window and there is no rain data in the serial output stream. If I reinitialize the rain gauge all is fine until power is lost, then I have to repeat the
process.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] Re: APRSWXNET status

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 19 Sep 2000 19:56:18 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110226-2000.09.19-21.24.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich,

Look under Real Time Graphics, select Potential Temperature, then NOAA Profiler Network, and then stns 00. I think I can see ap006 in red in NW Missouri. I don't understand why your obvious wind speed error is not showing up. I will check that tomorrow. Also, I will send you the location data to see if it is correct. I might have made an error in entering the lat and long. Hopefully, we'll get it right eventually.

Russ

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Tuesday, September 19, 2000 9:53 AM
Subject: [wxsig] Re: APRSWXNET status

> Russ, I cant find ap006. Also, since my wx station is reporting 99 mph, I

> guess I shoud see some errors as well. I'll have to figure out the "99"
mph
> problem later. I should be showing up in central Missouri, between KJEF
and
> KCOU, and may be looking at the wrong maps.
>
>
> >This morning at 1500Z, APRSWXNET was expanded to six stations. The
quality
> >checking results are available at
> >
> >http://www-sdd.fsl.noaa.gov/MSAS/qcms.html
> >
> >The qst (questionable) observation results appear under QC summary.
> >Occasional questionable observations are entirely normal as the weather
> >model is not perfect. However, numerous and frequent questionable
> >observations might indicate a problem. Note that there are a number of
> >errors in potential temperature for my weather station (ap001). I think
> >that this might be an error in my elevation. I've corrected the
elevation
> >and will watch over the next few weeks to see if the percentage of
> >questionable errors decreases.
> >
> >GIF maps of the obs and locations are given under "real time graphics"
and
> >if your station is "in the clear", you will be able to compare your
> >observations with other observations from nearby stations.
> >
> >Russ
> >kb0tvj
> >
> >
> >---
> >You are currently subscribed to wxsig as: wn0x@earthlink.net
> >To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] RE: DS1994 Installation Problems

From: William Beals <will@beals5.com>
Date: Tue, 19 Sep 2000 19:34:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110247-2000.09.19-22.43.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

It sounds like you are using that little metal holder thingy that I havn't
messed with yet. The part of the can that includes the perimeter of the
can and the flange is ground. The part that covers just one surface is the
1-wire bus. If you hook it up that way you should be all set.

The way you know the DS1994 is hooked up right and working is that the
firmware will briefly show a message saying the DS1994 has been detected
and time set (make sure you have the time set in the DS1994!). If you
don't see the message and still have 1.1.00 at midnight, something is
wrong.

There was an email I sent out when I released the code that said how to set
the time in the DS1994 and how to get the offset set correctly the first
time. After that it should work completely automatically.

will

-----Original Message-----

From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Tuesday, September 19, 2000 8:38 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] DS1994 Installation Problems

I upgraded my firmware to 1.10 but am unsure how to connect my DS1994. I noticed the I-Button holder has "+" on the top, but it appears from the placement of the DS1994 and its schematic that this is backwards. I have tried hooking up the "top" of the button to the 1-wire bus at J6 pin 14, and the "can" to ground. Is this right?

Will, is there anything in the firmware that will tell me if the T238 sees the DS1994?

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(A8#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`I````4D4Z(%MW>'-I
M9UT@1%,Q.3DT($EN<W1A;&QA=&EO;B!0<F]B;&5M<P#?#0$%@ ,`#@```- '
M"0`3`!,`(@`B``(`3 $!(( #``X```#0!PD`$P`3`!H`-@`"`%@!`0F `0`A
M````-T(U0D1$-S4V,3A%1#0Q,4$X-38P,# P13@Y0C-#,#D`'0<!`Y &`%0(
M```A````P`"```$````+`",````````,`)@``````"P`I````````#`"X``````
M``,`-@``````0 `Y`$ ^#.ZB(L !'@!P``$````I````4D4Z(%MW>'-I9UT@
M1%,Q.3DT($EN<W1A;&QA=&EO;B!0<F]B;&5M<P`````"`7$``0```!8````!
MP"*B[@QUW5M\CF$1U*A6``#HFSP)```>`!X,`0````4```!33510`````!X`
M'PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``800@&$N@,`!Q#<! ```@`(
M$ $```!E````4DE#2#I)5%-/54Y$4TQ)2T593U5!4D554TE.1U1(051,2514
M3$5-151!3$A/3$1%4E1(24Y'651(051)2$%63E1-15-31417251(64545$A%
M4$%25$]&5$A%0T%.5$A!5$E.0P`````"`0D0`0```"D%`````E!0``[ <``$Q:
M1G7R(=9S/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]
M$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@P&YG,3 S
M,PNF!_"Z:0]@.@JB"H0*@$D%0 YS"& 4T 0@;&EK9;0@>0A@(K &-!U`)!Y
M%@`@= ]P!4 8H ) ;.\8T > `9 #(&@&\ 2!&<$5&9%Y&<1)&N!A=F[.)P5
M!X$/H&0@`_ 9T(,8X ^P+B @5&@8T+,*L05 ;V89P1C08P.1>QG3"X!C"D !
M``0@'I)P?P9Q&I$;,1YI`' =`!Z29O<5XAC0! `@"< 80AVJ&=-M!:!V!) $
M(&H9<!Y!;G48T',(<&8`T")3'I(QMBT#\!E!8AEP':!)'G S&/(:\&]K'U %
M0'5P61G$=V$;L!CR<QKP=;\;$"9@&- '0 ,@#Z$N%TIC'=(H-FMN;P?@'I)$
MX%,Q.3DT(F(G,ASQLR>Q!1!G: 5 (8)W!;"_%+$9L"63&?$APR8P;2@P]QE!
M`_ I86((@2(`&[HL;4'X&$<HV$B03$`>1F4WRO'#W $("D@"? @`0`@D#YC
M() =`"&#!W$I@B H_P# &,$E$1C4'$$8T!Z2,]>S"X KF2$I':$FQ60"(/\<
M@0^@-80PUB&")* OHC53-#$N.E P#] 9\6UI]F0#`"U!+!@A&I$;<B)B?G<#
M8!8`*<XO8C*!`Y%EOP# `Q$<( ^@`C >4'4H$?\=X .@'")<!I@,H <\1Z3
MOP1Q&<0Q`#L`&N$K@6\T$_\UIS9[(7-!E2) +J0>8 /0_S0Q-"(%H0EP,T P
M,2[%)*'[,](=H4$!@!LS'S(8$2C$NRW") %M"U @@3 Q83\P[P-Q,] >T"E@
M>2G++Y(72N=+W@LP&* S-@% %: !0 T1,&\S(A!T,38@+=U.\D\M(0N &L%-
M,.1.\Q\71DX$3=$+$TX&:2TQS#0T`4 8H#$X.I ,P7%2DV(@1@-A%S ,DF(I
M%M0@0@60:QTC6U,03510.A;R0&1P7R:0)* 9\$<`!& N&7!=7Q=%4\ &8 (P
M5"=4"E!S_F0H0#MP!F %,#Y0*2 %P \L`#MP`= ZD3@Z,S@E#^!-5T=4;U@8
M05"P4B!76 8`(#!C!S&O'! ",#VA)*%'(K%P5T@8=6)J,S%4)UMW>/D`D&==
M*]9=$%:!*6!)X?D"("!0`V "8#Y0#S!0K_]1N4U4"[874PKC%^$GH0G]F$!
M`!T`;1NP+P=!T3I1]P_0)G M86T98 " --)!E7T%H&XDX#- 9=(KY#=B(,<K
M8$GQ0#5)+4(_,$'0QP.@&O4R<B(K(B3!-92<;W [<&<B)X%A<" P_P^!(? #
M81_D"V E8 > /O+_'G1#21HP!" $\!W@2=,N9OLB<2)Q8@#053 +$2:1'!1_
M-8$(@4%R)U 9DB>S&- B_VR!:_$>=&<A:N)!T27,.K)Z2D[0<#9Q4I [<"&&
M(N\>T6OP1#(BMDD?TB)Q+2/Z/Q=*5R^A.W EE!E!`'#^>3O5-H1F&"?S+Z))
M00,@\T*B'G14,EJ!.&$?U"OD5C\=L$O?"E!G61D%8_\(< EP`C P,EZ0!/(I
M("&AYT'@7Y,9(',Z'1!9@0= O'- 2.(9< 20)# N2.'_*C5!X&>2@S4^PC-Q
M)F 5X?\G8#Y40=$_\20P)A!?HE* P#4W,#=-0!B@)*#7)I !D!$P+@6P9Q=*
M$?$"`(NP`````P`0$ `````#`!$0``````,`@!#_____0 ``, `V,-RA(L !
M0 `(, `V,-RA(L !"P``@ @@!@`````P ```````$8``````X4`````````#
M``* "" &`````# ````````1@`````0A0`````````,`!8 ((8``````, `
M``````!&`````%*%``"W#0```P`)@ @@!@`````P ```````$8``````84`
M```````>`"* "" &`````# ````````1@````!4A0```0````0````X+C `

```
M"P`F@ @@!@``````P ```````$8`````#H4````````#`"> "" &``````#
M`````````1@`````1A0````````,`*8 (( 8``````, ```````!&`````!B%
M`````````'@`X@ @@!@``````P ```````$8`````-H4```$````!`````````
M`!X`.8 (( 8``````, ```````!&`````#>%```!`````0`````````>`#J
M"" &``````# ````````1@`````XA0```0````$`````````'@`]``$````%
5````4D4Z( `````#``TT_3<``( K
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

58. [wxsig] Re: APRSWXNET status

```
From: William Beals <will@beals5.com>
Date: Tue, 19 Sep 2000 20:07:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110248-2000.09.19-22.43.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Rich:

You are reporting 99MPH readings??!! Please tell me more, the T238 should not be doing this.

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Tuesday, September 19, 2000 9:54 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: APRSWXNET status

Russ, I cant find ap006. Also, since my wx station is reporting 99 mph, I
guess I shoud see some errors as well. I'll have to figure out the "99" mph
problem later. I should be showing up in central Missouri, between KJEF and
KCOU, and may be looking at the wrong maps.

>This morning at 1500Z, APRSWXNET was expanded to six stations. The quality
>checking results are available at
>
>http://www-sdd.fsl.noaa.gov/MSAS/qcms.html
>
>The qst (questionable) observation results appear under QC summary.
>Occasional questionable observations are entirely normal as the weather
>model is not perfect. However, numerous and frequent questionable
>observations might indicate a problem. Note that there are a number of
>errors in potential temperature for my weather station (ap001). I think
>that this might be an error in my elevation. I've corrected the elevation
>and will watch over the next few weeks to see if the percentage of
>questionable errors decreases.
>
>GIF maps of the obs and locations are given under "real time graphics" and
>if your station is "in the clear", you will be able to compare your
>observations with other observations from nearby stations.
>
>Russ
>kb0tvj
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

```
---
You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(AP#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
```

```
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`A````4D4Z(%MW>'-I
M9UT@4F4Z($%04E-76$Y%5"!S=&%T=7,`G H!!8 #``X```#0!PD`$P`4``<`
M-0`"`$4!`2" `P`.````T <)`!,`% `!``X``@`>`0$)@ $`(0```#=&-4)$
M1#<U-C$X140T,3%!.#4V,# P,$4X.4(S0S Y`"$``0.0!@#P" ``(0```L`
M`@`!`````"P`C```````#`"8``````L`*0```````P`N```````#`#8`````
M`$ `.0`@\L:5IR+ `1X`< `!````(0```%)%.B!;=WAS:6==(%)E.B!!4%)3
M5UA.150@<W1A='5S``````(!<0`!````%@````' (J>5QG7=6X".81'4J%8`
M`.B;/ D``!X`'@P!````!0```%--5% `````'@`?# $````0````=VEL;$!B
M96%L<S4N8V]M``,`!A#6H[ZE`P`'$)4%```>``@0`0```&4```!224-(.EE/
M54%215)%4$]25$E.1SDY35!(4D5!1$E.1U,_/U!,14%3151%3$Q-14U/4D4L
M5$A%5#(S.%-(3U5,1$Y/5$)%1$])3D=42$E35TE,3"TM+2TM3U))1TE.04Q-
M15-3``````(!"1 !````S@4``,H%```T"0``3%I&=:OTL*$_``H!`P'W`J0#
MXP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *
M@78(D'=K"X!DVC0,8&,`4 L#8P!!"V# ;F<Q,#,S"Z8'\+II#V Z"J(*A J
M60A@TB *P&4@"7!P"1$+@(!G(#DY35!(&'$$8608X7,_/R$A," @4&P9D ^@
M('0\96P#( > &Q %L&4L!1K :!A@5#(S." $<V@(8&QD(&YOY05 8AA@9&\8
MXANP! `^+A=*`_ :\!=*"O1L:?PS-@% %: !0!$P', %D$)T$'0Q-B M(9)/
M/0409PN !T %T >0<V'\9V4ADQ=&(*0@<0L3(*9@:2TQ-#0!0!_P,1PX, %
M#- E,V(@1I<#81<P#))B%M0@0@60!FL#\!NP(%M3353(4#IW"@!X0!F0`"!"
M:!_P;FLN;@^P75\7129@!F ",";'5 I0<[AD87D;D 9@!3!E!M#Q!) @,3D;
MD '0)< 9$"@Z-30/X$TIQU1O@2J805!2(%=8!@#F< 60!S$@20(P!) 'D"4%
M0$<#8'5P*<AU8D9J(-$FQUMW> "09[)=!_!E.@_@+K!3+N"83D54'# !D'1U
M#S!_(T\D61_T"[874PKC"H!2Q3.@<QN022!C`' %0)<E`!30&#!P)< V+AI
M,$%L<V\;D "0;F-9&S%Y(#(0,U-I`B @9P0`&'L;$'!H-W$71&?_*S$$(#>0
M'$(<D ^@&& X\+\;(020`V /D!@P!"!W&N%9.*%))QKQ#W!V&K%OOS?Q/# 8
M40A@!4 ;LB(9(+XB.V(71""1`F K\" +8/\OL3Z"'#8<\1Q!`_ 8\3!0[SI@
M`Z Y8 (P<B)"! $(8AL;D!SP=#Y "? @2TH<1488,!30%T1+0T]^51N01>$;
M$"MP'.()`&_O%+$9`#. &Z-W`V 8\0# YG =O!=$/E0=D1M"`P!I1]0Q-27
M6AN0,LAW^3X197@*L!30"8 _0@"0GSG7'; :0$I0&&!Q=0= _2?P>4GE#V G
ML1CB+]$<</YT/?$843\0"W +8$&!1_$+2>5)Y6@"0' Z+R_*=U+0+2M09"X#
MT#YP`1RP86$N9V]V+X$%X$%3+W%C;1VPO5)@;1[%4>9.4R_Q*$Z05R_A.C%1
M$BD_X&(/H'*W4- Z(U '<"\@"L%U3.%)!<!10QPP=6T`P'+B>1W%/D]C-[ `
MD%;17P,@5GI72E!D*F%I"7!L^SF@'+!R`, #(#X12#,9D/T;L7))Y01B`R Z
M<1RR+R"L<F8@T3BA2$,P93\@^G(;D&Y9H 20"& ]\3@A?0-0959Q-]%6>DGE
M7 MM_R(`4F!#L1FP-[ :T!@P8"#[060XH4X@L1NA2 10DE"2\V%2+!)O9DGE
M/:5#P1B@_QK072$B02OA8#$S@1A1`A O!< YDEZ4.><H.%(Q*?]"(QV!*5!)
MY6;%2G)DTQSQ_P.1/:-#LCF1&N!A`#H3/H/_/R$%H0EP(.!-`AO!;^=)Y?=&
MTAZ23%%T)W%3\"PA&[+=*8!X-^$'T45!:UXA34'_/2$&D!NC8#%#\B*Q:#A;
M.S\]I06!&8$/H!VV4>9'2?]%P$C2:#$;HU=11L,)`&5AWUR'(A _( .@600B
M&8%I\=\'<7QP1# [@!<`<T"@1>?:/G6Q>0AA.>HB0\$;LO)C&G%R(AN0?V%S
M!&["_U$B/U$%H#MP&$)_8F./!C%_)^,<P&N"7 L#4G1!"L!B7SF@3:=1C#<R
M2>5K)R!T7'9J48Q)Y2,'/A@&8_\(< EP`C!=<5 @5V %`1SP_TT3,A,^`3*@
M*)]1=BW@6/'?C'<]`3@B'. 5X6L]D # ;P,1/U$:<3\@+3(3)2 UX#<P-TU
M'_ O\!VPZP&0$3 N!;!GB6])72,'GXM?C&^-=RP!!T!S0(*B\S.@5X%E+H*A
M%T2/CY"?7Y&ODK^3QA=$$?$`H# ```,`$! ``````P`1$ `````#`( 0____
M_T `!S @OK)^IR+ `4 `"# @OK)^IR+ `0L``( (( 8``````, ```````!&
M``````.%`````````P`"@ @@!@`````P ```````$8`````$(4````````#
M``6 "" &`````# ````````1@````!2A0``MPT```,`"8 (( 8``````, `
M``````!&``````&%`````````'@`B@ @@!@``````P ```````$8`````5(4`
M``$````$````."XP``L`)H (( 8``````, ```````!&``````Z%````````
M`P`G@ @@!@``````P ```````$8`````$84````````#`"F "" &``````#
M````````1@`````8A0```````!X`.( (( 8``````, ```````!&`````#:%
M```!`````0`````````>`#F "" &`````# ````````1@`````WA0```0``
M``$`````````'@`Z@ @@!@``````P ```````$8`````.(4```$````!````
B`````!X`/0`!````!0```%)%.B ``````P`--/TW```+<(4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

59. [wxsig] Re: DS1994 Installation Problems

From: William Beals <will@beals5.com>
Date: Tue, 19 Sep 2000 20:49:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110249-2000.09.19-22.43.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

The problem with the rain guage data going away on a power cycle is news to me. I will look into that. I shoud initialize all my variables and such on power-up each time. I did add a feature in 1.10.x that would ignore the rain guage if I don't detect it on power-up. That was at the request of the folk that want to remove the rain guages for the winter. Sounds like I introduced some kind of nasty bug. Oops.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Tuesday, September 19, 2000 5:28 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: DS1994 Installation Problems

Rich Beckwith wrote:

> I upgraded my firmware to 1.10 but am unsure how to connect my DS1994. I noticed the I-Button holder has "+" on the top, but it appears from the placement of the DS1994 and its schematic that this is backwards. I have tried hooking up the "top" of the button to the 1-wire bus at J6 pin 14, and the "can" to ground. Is this right?
>
> Will, is there anything in the firmware that will tell me if the T238 sees the DS1994?
>

Rich:
I installed the DS1994 can in one of my boards and yes the "+" goes to the top of the can. The body is the common. Once the unit is powered-up it will give a message that the 1994 was found and that it is setting the clock from it. Have you noticed the problem I've stated below?

Will:
I noticed on the ver1.10 software that when I lose power to the board and then power it back up that the rain gauge info is lost. It shows dashed lines in the current display window and there is no rain data in the serial output stream. If I reinitialize the rain gauge all is fine until power is lost, then I have to repeat the
process.

Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(B8#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`M````4D4Z(%MW>'-I
M9UT@4F4Z($13,3DY-"!);G-T86QL871I;VX@4')O8FQE;7,`\ X!!8 #``X`
M``#0!PD`$P`4`#$`*P`"`&4!`2" `P`.````T <)`!,`% `<`" ``@!%`0$)
M@ $`(0```#A"-4)$1#<U-C$X140T,3%!.#4V,# P,$4X.4(S0S Y`!X'`0.0
M!@! "0``(0````L``@`!````"P`C``````#`"8``````L`*0``````P`N
M```````#`#8``````$ `.0# =+=MK2+ `1X`< `!````+0```%)%.B!;=WAS
M:6==(%)E.B!$4S$Y.30@26YS=&%L;&%T:6]N(%!R;V)L96US``````(!<0`!
M````%@````' (JUMMW7=6XR.81'4J%8``.B;/ D``!X`'@P!````!0```%--
M5% `````'@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A!3YY:?`P`'
M$+@%```>``@0`0```&4```!$3U5'.E1(15!23T),14U7251(5$A%4D%)3D=5
M04=%1$%404=/24Y'05=!64].05!/5T520UE#3$5)4TY%5U-43TU%25=)3$Q,
M3T]+24Y43U1(051)4TA/541)3DE424%,25I%``````(!"1 !````$@8```X&
M```Y"0``3%I&=6O^]S<_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .
MYG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!
M"V! ;F<Q,#,S"Z8@<D0(8&<Z"J(*A J 5"AH92 1,&\"8&5M8B #\'1H(!C@
M&"!R00MQ(&=U86<8(&0680&0&9!O"X!G(&%P=V%Y( (@&J 8,&]"=P20(&-Y
```

```
M8QB (!D$`"!N!] $('1O(*$'@"X@($D8L6P#(/D)`&]K' `",!R@&. :$.D<
MXW-H"&!D'<$8T <Q7&EZ&" '0 ,@;1K@=K\*P <P&'$$( !P'O!S%1 '&/ ;
M`1M3+75P(&5/`- 8\0=Q'.-D:1[P8=)D(R$@9B(@= AP&_')`Z Q+A8@+G@>
M$QBPY0A@;![Q9VX%L!@@&1VW!I BT@(@)P5 `0!T!9"_!4 8T"%:'.$8`"3B
M82"QTP5 &1-E<0I0<R@!)N#[&1("$&P=L"3$`' IH1R@^PEP!&!V)<X$( (0
M!< 9$N\#\ (P!) <X5,(8!30!""]'W!K&" =$!W1`V!D%1"_"8 >H -P&" 4
MLBIR;BE@&G0:X&(7$!SA3V]P?',N%TH=,A=*"O0?<#-^-@% %: !0!A!)Z(0
M=#&H-B M-<)/!1!G"X#W!T %T >0<QG!-<,71C34!S2A"Q,TUFDM,30TXP%
M'W Q.# !0 S0.6.X8B!&`V$7, R28A;4`"!;4TU44#ID:3%0:'(#@4 94",`
M:_,QX!Q =%T713J0!F ",,TZ]U0J,1H`>2P&404PY1B08AN!,3D_0 '0.? `
M(#4Z,C@@4$T)/7=4;SY(05!2(/176 8`< 60!S$=`"XB'2I"1P-@(? ]>'5B
M:B,GL3KW6W=X`)!G72D'\&4Z%N!30 `Y-*]#,2I0'\$:$&D;`5 85/\/,#=_
M.(DT) NV%U,*XPJ 5%)I(3%"!9!K&,-W^S32%SL^'0$A\ G (T O\?\@`3DP
M/' :P"6R'* D4C%!_05 81B@+K A$"/Q'L 'X/L<D06@;AQ )\$@`49T'../
M)9 ?0"_B&1))+4)/P'\<D .@'L E0!N!#W $("+<*R(:\AD2')!P/T!/LODG
M\6%P0M /@2.0`V$9`_\+42_@!X KL2J%1G4@TAC0_P0@!/ 8$ # 4H$DM!C@
M'!']'!%B`-!,( L1,> <\@]P_RQ2"($>\![ ': :<B'Q&1+^(E415($JE$^Q
M4W(=\Q@@O#$M`_ C\3%0*7-*-:"Z<"0B-#] (-)<DV,`</]4@!R1"< NHASB
M''%9XC8AV&AT/TU%3497'4$_0.\<$1D1(_$`<'E9T1J!&7'_*K-.MR33'4(G
MH!_2)K,9$OA4,C- P ^@!Y%7N&*,_TM(%S4O4D<#4K5&=6"A)!)_`B 8("J!
M( $&X%JB(,-Y_V@%5&(:4&@"7B15$2IV8*&_*--=@01P&N!CY%#Q;01@^7!"
M3VXOX!D#+K G\1P1_QM3"8 AXB?Q'3,V0"Q1&C#_!X$VTEEV7F%&HBE2`A N
ML?]@!23A<L0/H1] &H%OXPD`KTP05D08T!SA2%M">0A@\U);&$9))RQ11P$G
MH![P^S_ "0!W8H471&.":E=29OM4I2Q0<D]C," !@&6Y&!#_`Z =$ D`#Z ;
M15X5;4-@!K\A=2?B6E)<5"F6&6-A%Q#_) ("$!P"@+$>4P5 'K$<87\:`!ZP
M+_$?<!Q 6@%4M&/O"' )<"NQ(P!S"U$:X"X!_R<@!^!@%2/R'"$K\1EB&@/?
M904/H <B&O!/P'!/P2I0_PEP3_ <XB;B"7 ?&80M'\+_'!$Y,&RQ+K ?0 ,@
M@L6%=/\_0()S6Q8K\E7Q*:,71!A!3R_@!! Q^SN#2S!&<%!W,PX7AC<W67G1
M3O*'U6S[&N A$&($\C_ 4L$<H$7#-1J@<T90=S^Q!T!S0.]Q@8OPBU$L4"YQ
M@1>E'*#_4"*8!6?1=I(Q0!7A';!9$7\#$1R1&(!;05Z01=(Y4#7@-S W34 ?
M<"I0,>!K`9 1,"X%L&<72A'Q``&@@ ```P`0$ `````#`!$0``````,`@!#_
M____0 `',$#>2'BJ(L !0 `(,$#>2'BJ(L !"P``@ @@!@`````P ``````
M`$8``````X4```````#``* "" &`````# ````````1@`````0A0``````
M``,`!8 (( 8``````, ```````!&`````%*%``"W#0```P`)@ @@!@``````
MP ```````$8``````84````````>`"* "" &`````# ````````1@````!4
MA0```0````0````X+C `"P`F@ @@!@``````P ```````$8`````#H4`````
M```#`"> "" &`````# ````````1@`````1A0````````,`*8 (( 8`````
M`, ```````!&`````!B%````````'@`X@ @@!@``````P ```````$8`````
M-H4```$````!`````````!X`.8 (( 8``````, ```````!&`````#>%```!
M`````0`````````>`#J "" &`````# ````````1@`````XA0```0````$`
D````````'@`]``$````%````4D4Z( `````#``TT_3<``$IZ
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

60. [wxsig] RE: DS1994 Installation Problems

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 19 Sep 2000 23:56:10 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110251-2000.09.19-23.04.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: William Beals
> Sent: Tuesday, September 19, 2000 9:35 PM

[snip]

> There was an email I sent out when I released the code that
> said how to set the time in the DS1994 and how to get the
> offset set correctly the first time. After that it
> should work completely automatically.

Can you resend this to the list?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] 1.10.0 Release (repost for time setting)

From: William Beals <will@beals5.com>
Date: Wed, 20 Sep 2000 06:25:51 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>

Message-ID: <LYR15067-110291-2000.09.20-07.28.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: William Beals [SMTP:will@beals5.com]
Sent: Sunday, August 06, 2000 9:15 PM
To: 'wxsig (TAPR)'
Subject: 1.10.0 Release

Folks:

Release 1.10.0 is now up. Russ found a good bug in it before I released
it, saving me some embarassment. Major features are:

1) T238 can now read time from a DS1994 real-time clock.
2) Found and fixed a hole in the wind sensing routines that gave bad data.
3) Now the LCD should come up OK in debug mode (need **full** download to
get this feature).
4) Now handle removal of rain guage (for winter) more gracefully.

Note: To use the DS1994, you must set the time using your PC. When you
do, you must set the DS1994 to GMT, not local time. After "booting up"
with the DS1994 for the first time, re-run the time-set routines to enter
the correct local time. After that I store the correct offset and you
should never have to re-enter the time again.

Also, starting with 1.10.0, I have moved the LCD version string to the
"Display Current Data" menu page instead of after you start displaying
data. Hopefully this is more convenient to find.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] KPC3 set-up

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Wed, 20 Sep 2000 07:37:25 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110292-2000.09.20-07.45.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ok I have installed TinyTrak units in both autos and this has made the
KPC3 and KPC3+ available for other uses like as an APRS Wx Digi.(Thank
You TinyTrak!!)
I have decided to use the KPC3+ as the Wx digi. It has Firmware V8.2
This does NOT include the optional "second serial port". So I don't
think I need the modified T-238 code that requires the extra CR or LF
that has been mentioned here lately.
I belive I should be able to use the KPC3+ standalone with the T-238 (no
computer) in the "GPS" mode to gather Wx data and transmit the same. I
set the T-238 for TNC-dir (NOT TNC-ltp because I only have firmware
V8.2) I have set my LT 1 and LT 3 With basic APRS position strings and
set the BLT 1 and BLT 3 for 30 and 44 minutes to have it burp out my
position, power, message etc.
I left LT 2 and LT 4 empty to allow for Wx data and set BLT 2 for every
4 min 45 sec and BLT 4 for every 4 min 50 sec. Abaud is set for 4800 to
match T-238 and INT is set for GPS. This should allow the T-238 Wx
string to be put into the LT 2 & 4 and transmitted.
Question: What do I put in GPSHEAD 2 and GPSHEAD 4 to collect Wx data
from the T-238? The docs show the _ as the "character to flag weather
data" Do I put a single _ in the GPSHEAD 1 & 2 positions? I tried this
and my station shows up on finu.com but no wx data. Monitoring it with
the other TNC shows it is only burping out the LT 1 & 3 position strings
I installed. Not any T-238 WX data. I even changed GPSHEAD to !! and
abaud to 2400 and T-238 to peet mode...still no wx data. Am I missing
something here? Also what is the data format from the T-238 N81 or is it

7 bits I would like to view the output on windows 3.1 terminal program.
I also don't understand how the T-238 position string comes into play.
When set on, is it added to the wx string or is it a seperate string?
I'm sure someone out there has done this and may be able to help.. I'm
just kinda lost at this point.
Thank You, Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

63. [wxsig] Re: 1.10.0 Release (repost for time setting)

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Wed, 20 Sep 2000 09:33:11 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110296-2000.09.20-08.41.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, in order to use a DS1994 I need to order one and a carrier for it?
And then it just chains on the 1-wire bus? Is the software to set the
clock free from Dallas Semi?

My station has lost about 20 minutes in the last week. An alternative
might be an adjustment from the menu? Supposing you are using a
counter of some sort that could be changed.

Got it on line, sort of, as n4map-3. I can't reliably hit the closest
digi with 5 watts, so I need more power or a better antenna or both.
T238 is 200' from the weather station. Radio, TNC, and 7AH battery are
in an ammo box at the base of the pole that holds the wx station. I
use 3 wires from the 10-baseT cable for the serial lines to the TNC.
Solar cell keeps ammo box charged up.

A neat software feature might be to listen for the digipeat of a
transmission. If it's not heard we could re-transmit? Have it give up
after a couple of tries so it doesn't kill my battery :-)

--
Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] Re: 1.10.0 Release (repost for time setting)

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 20 Sep 2000 08:54:03 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110298-2000.09.20-08.59.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will:

- 99MPH
Have no idea why it would report 99MPH. Check findu.com http://www.findu.com/cgi-bin/wxpage.cgi?WN0X-3
on the 19th to see what I was talking about. The odd thing is that it appeared to only be "gust"
information that was at 99mph when it was reporting this. I am not sure it is a problem with the T238.
  It might be something up with the Wx station. See below on intermittent reporting problems.

- DS1994
Where is the software to configure the DS1994? Please add to your long wish list the ability to send
what ever I enter into the T238 as the correct time. Will the T238 check the DS1994 occasionaly to sync
 up?

Russ:

I may have given you the wrong coordinates too, so don't worry about it. When you asked for the
additional accuracy I fudged and used MapBlast, so I might have given you bad coordinates, or
coordinates in the wrong format.

All:

I have had a lot of gaps in my reporting since putting the station back together after the MS-150
bike-a-thon. Turns out a spider was in the RJ11 jack when I plugged in the rain sensor last time.
Sufficient goo and corrosion to cause intermittent problems. It would kick back on after midnight,
then drop off when it warmed up during the day.   I was sure the gold plated contacts would hold up

better. They are not exposed and are mounted in a small black enclosure mounted to the pole. How is every one else doing this?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] Re: KPC3 set-up

From: Michael Barelli "W□MAF" <barelmic@yahoo.com>
Date: Wed, 20 Sep 2000 09:06:49 -0700 (PDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110317-2000.09.20-11.14.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Try GPSHEAD @

This will bring up the string with Position data and wx data all at once. There must be a LF at the end or the data is not stored in LT. The data is sent every 5 min in the 59th cycle. With Ver8.3 there is a clear command after the data is sent. BLT is then set to 1 min 5 sec. with clear. If empty it does not send data. Hence once every 5 min..

Hope this helps

  Bill Ellis <rwsw60@email.sps.mot.com> wrote:
Ok I have installed TinyTrak units in both autos and this has made the
KPC3 and KPC3+ available for other uses like as an APRS Wx Digi.(Thank
You TinyTrak!!)
I have decided to use the KPC3+ as the Wx digi. It has Firmware V8.2
This does NOT include the optional "second serial port". So I don't
think I need the modified T-238 code that requires the extra CR or LF
that has been mentioned here lately.
I belive I should be able to use the KPC3+ standalone with the T-238 (no
computer) in the "GPS" mode to gather Wx data and transmit the same. I
set the T-238 for TNC-dir (NOT TNC-ltp because I only have firmware
V8.2) I have set my LT 1 and LT 3 With basic APRS position strings and
set the BLT 1 and BLT 3 for 30 and 44 minutes to have it burp out my
position, power, message etc.
I left LT 2 and LT 4 empty to allow for Wx data and set BLT 2 for every
4 min 45 sec and BLT 4 for every 4 min 50 sec. Abaud is set for 4800 to
match T-238 and INT is set for GPS. This should allow the T-238 Wx
string to be put into the LT 2 & 4 and transmitted.
Question: What do I put in GPSHEAD 2 and GPSHEAD 4 to collect Wx data
from the T-238? The docs show the _ as the "character to flag weather
data" Do I put a single _ in the GPSHEAD 1 & 2 positions? I tried this
and my station shows up on finu.com but no wx data. Monitoring it with
the other TNC shows it is only burping out the LT 1 & 3 position strings
I installed. Not any T-238 WX data. I even changed GPSHEAD to !! and
abaud to 2400 and T-238 to peet mode...still no wx data. Am I missing
something here? Also what is the data format from the T-238 N81 or is it
7 bits I would like to view the output on windows 3.1 terminal program.
I also don't understand how the T-238 position string comes into play.
When set on, is it added to the wx string or is it a seperate string?
I'm sure someone out there has done this and may be able to help.. I'm
just kinda lost at this point.
Thank You, Bill N5ZTW

You are currently subscribed to wxsig as: w0maf@arrl.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Michael Barelli W□MAF

Do You Yahoo!?
Send instant messages & get email alerts with Yahoo! Messenger.

66. [wxsig] Re: 1.10.0 Release (repost for time setting)

From: William Beals <will@beals5.com>
Date: Thu, 21 Sep 2000 07:52:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110460-2000.09.21-10.29.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sam:

Yes on the carrier, order your favoirte 1994 carrier and hook it up to the
same bus used by the weather station. The software to program the clock
from your PC is free form Dallas, it is their i-button viewer/setter
program (and a pretty nice one too!)

Losing 20 minutes in 1 week is pretty excessive. Some quick math says that
is about 0.2%, much more than should be because of the crystal. I do use
an internal counter to divide down the crystal frequency to give me 100ms
interrupts that run the entire acquisition process including the clock. I
had some issues with some of the older software where I would end up losing
a few interrupts in the presence of major errors on the bus. Are you
getting lots of errors and what version software are you running?

Cool on running battery powered!

I have been tinkering around with the idea of listening for returned
packets. In my case it is because occasionally my TNC drops out of
converstation mode and I quit sending out data. This is a big deal as when
I turn monitoring on, I am going to get pummelled with a lot of data that
could be almost anything and I need to handle it all gracefully.

will

-----Original Message-----
From: Sam Smith [SMTP:sam.smith@ece.gatech.edu]
Sent: Wednesday, September 20, 2000 7:33 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1.10.0 Release (repost for time setting)

OK, in order to use a DS1994 I need to order one and a carrier for it?
And then it just chains on the 1-wire bus? Is the software to set the
clock free from Dallas Semi?

My station has lost about 20 minutes in the last week. An alternative
might be an adjustment from the menu? Supposing you are using a
counter of some sort that could be changed.

Got it on line, sort of, as n4map-3. I can't reliably hit the closest
digi with 5 watts, so I need more power or a better antenna or both.
T238 is 200' from the weather station. Radio, TNC, and 7AH battery are
in an ammo box at the base of the pole that holds the wx station. I
use 3 wires from the 10-baseT cable for the serial lines to the TNC.
Solar cell keeps ammo box charged up.

A neat software feature might be to listen for the digipeat of a
transmission. If it's not heard we could re-transmit? Have it give up
after a couple of tries so it doesn't kill my battery :-)

--
Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

67. [wxsig] Re: 1.10.0 Release (repost for time setting)

From: William Beals <will@beals5.com>
Date: Thu, 21 Sep 2000 08:04:02 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110461-2000.09.21-10.30.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

I think Russ reported a similar occasional problem getting a 99MPH gust.
 The actual wind data I send out is averaged, so a single (bad) reading of
99MPH would likely get averaged out with all the other correct readings.
 Fixing these issues is high on my list as reporting bad data is not good.

I have not been able to chase this one down yet.

The software to configure the Dallas DS1994 is on their website and called the i-button viewer. I am in the middle of a business trip in DC, so I don't have easy internet access right now to get you the exact path, sorry.

In my regular line of work I work on consumer satellite receivers. A natural problem we have is heavy rain attenuating the signal and it has been named rain-fade. People occasionally put all sorts of interesting things between their dish and our satellite so we joke about all sort of xx-fades (dog-fade, tree-fade, sunflower-fade...). Spider-fade is a new one!

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Wednesday, September 20, 2000 7:54 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1.10.0 Release (repost for time setting)

Will:

- 99MPH
Have no idea why it would report 99MPH. Check findu.com http://www.findu.com/cgi-bin/wxpage.cgi?WN0X-3 on the 19th to see what I was talking about. The odd thing is that it appeared to only be "gust" information that was at 99mph when it was reporting this. I am not sure it is a problem with the T238. It might be something up with the Wx station. See below on intermittent reporting problems.

- DS1994
Where is the software to configure the DS1994? Please add to your long wish list the ability to send what ever I enter into the T238 as the correct time. Will the T238 check the DS1994 occasionaly to sync up?

Russ:

I may have given you the wrong coordinates too, so don't worry about it. When you asked for the additional accuracy I fudged and used MapBlast, so I might have given you bad coordinates, or coordinates in the wrong format.

All:

I have had a lot of gaps in my reporting since putting the station back together after the MS-150 bike-a-thon. Turns out a spider was in the RJ11 jack when I plugged in the rain sensor last time. Sufficient goo and corrosion to cause intermittent problems. It would kick back on after midnight, then drop off when it warmed up during the day. I was sure the gold plated contacts would hold up better. They are not exposed and are mounted in a small black enclosure mounted to the pole. How is every one else doing this?

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] Re: 1.10.0 Release (repost for time setting)

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 21 Sep 2000 10:56:18 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110465-2000.09.21-11.01.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a similar problem at work. We call it "end-user-fade". It causes a disruption in the normal operation of a personnel computer.

>>> will@beals5.com 09/21/00 09:04AM >>>
Rich:

I think Russ reported a similar occasional problem getting a 99MPH gust.
 The actual wind data I send out is averaged, so a single (bad) reading of
99MPH would likely get averaged out with all the other correct readings.
 Fixing these issues is high on my list as reporting bad data is not good.
 I have not been able to chase this one down yet....

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] Re: 1.10.0 Release (repost for time setting)

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Thu, 21 Sep 2000 12:05:59 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110469-2000.09.21-11.14.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I often suffer with "brain-fade". Is that the same thing?

----- Original Message -----
From: "Rich Beckwith" <Rich@dps.state.mo.us>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Thursday, September 21, 2000 11:56 AM
Subject: [wxsig] Re: 1.10.0 Release (repost for time setting)

> I have a similar problem at work. We call it "end-user-fade".   It causes
a disruption in the normal operation of a personnel computer.
>
>
>
> >>> will@beals5.com 09/21/00 09:04AM >>>
> Rich:
>
> I think Russ reported a similar occasional problem getting a 99MPH gust.
> The actual wind data I send out is averaged, so a single (bad) reading of
> 99MPH would likely get averaged out with all the other correct readings.
> Fixing these issues is high on my list as reporting bad data is not good.
> I have not been able to chase this one down yet....
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

70. [wxsig] Re: 1.10.0 Release (repost for time setting)

From: William Beals <will@beals5.com>
Date: Thu, 21 Sep 2000 19:08:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110522-2000.09.21-20.17.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I guess we are all in agreement!!

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Thursday, September 21, 2000 10:06 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1.10.0 Release (repost for time setting)

I often suffer with "brain-fade". Is that the same thing?

----- Original Message -----
From: "Rich Beckwith" <Rich@dps.state.mo.us>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Thursday, September 21, 2000 11:56 AM

Subject: [wxsig] Re: 1.10.0 Release (repost for time setting)

> I have a similar problem at work. We call it "end-user-fade".   It causes
a disruption in the normal operation of a personnel computer.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] Re: KPC3 set-up

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Fri, 22 Sep 2000 07:15:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110578-2000.09.22-07.24.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Michael, Thank You for the reply, I tried the @ and still no go. It
seems the KPC3+ (v8.2)and the T-238 are not talking. I started looking
at the data from the T-238 on Windows 3.1 terminal program. I get a
string every five minutes with the correct numbers of places but strange
ASCII. I see a lot of lower case y and w and upside down question marks,
weird stuff! I've tried all terminal combos 7, bit 8 bit, parity, bla
bla, it seems the baud rate is ok because if I change it the strings get
short or not at all. I have tried all formats peet, TNC dir, TNC ltp,
computer dir. Do you know if the T-238 converts the wx data to some kind
of MicE format or does it look like my board has got a problem? Keep in
mind it is a home brew not a TAPR kit. I also replaced the Max 232 chip
with the same results. I guess I need to triple check the wiring in this
area. I think board wiring is most likely the issue.
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

72. [wxsig] Re: KPC3 set-up

From: Michael Barelli "W□MAF" <barelmic@yahoo.com>
Date: Fri, 22 Sep 2000 07:26:46 -0700 (PDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110585-2000.09.22-09.34.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Looks more complicated than I thought. Try using the Peet mode with 2400 bd and using !! for Gpshead.
This will send data at once every 5 seconds. You will not get averaged data but this will work. Try
looking at the data with the terminal mode in Winaprs.

Good luck!

  Bill Ellis <rwsw60@email.sps.mot.com> wrote:
Michael, Thank You for the reply, I tried the @ and still no go. It
seems the KPC3+ (v8.2)and the T-238 are not talking. I started looking
at the data from the T-238 on Windows 3.1 terminal program. I get a
string every five minutes with the correct numbers of places but strange
ASCII. I see a lot of lower case y and w and upside down question marks,
weird stuff! I've tried all terminal combos 7, bit 8 bit, parity, bla
bla, it seems the baud rate is ok because if I change it the strings get
short or not at all. I have tried all formats peet, TNC dir, TNC ltp,
computer dir. Do you know if the T-238 converts the wx data to some kind
of MicE format or does it look like my board has got a problem? Keep in
mind it is a home brew not a TAPR kit. I also replaced the Max 232 chip
with the same results. I guess I need to triple check the wiring in this
area. I think board wiring is most likely the issue.
Bill N5ZTW

You are currently subscribed to wxsig as: w0maf@arrl.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Michael Barelli W□MAF

Do You Yahoo!?

Send instant messages & get email alerts with Yahoo! Messenger.

73. [wxsig] rainy night in GA

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Fri, 22 Sep 2000 10:36:41 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110587-2000.09.22-09.45.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Actually a rainy day yesterday, with thunderstorms. Zapped my T238 and
TNC. Didn't hurt the radio at all.

TNC and radio are outside with the sensors. 200' of cable back to the
T-238. MAX232 was zapped in the T-238 - replaced it and it seems OK
now. LCD display wasn't working so I feared the worst, but it turns
out the MAX232 generates -V for the contrast, so replacing the 232
brought the display back to life. Weather sensors were fine. No damage
to anything else in the shack.

TNC (KPC3+) is another problem, haven't fixed it yet.

Maybe it's not such a good idea putting the TNC outside...

--
Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

74. [wxsig] Re: KPC3 set-up

From: William Beals <will@beals5.com>
Date: Fri, 22 Sep 2000 20:20:02 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110641-2000.09.22-22.28.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

If neither the TNC nor the computer are getting the right data, then it is
likely that it is not coming out of your board correctly. The firmware
should be sending nothing but printable ASCII plus linefee/carraige return
stuff. If you can get near a silly-scope to see if the data is the right
voltage and timing that would be great, but I assume you are not so luckily
equipped. Since you are getting some data it could be something like bad
volrages from the MAX chip. Check the MAX232 voltages on pins 2 and 6.
 They should be about +9V and -9V respectively. If not, something weird is
going on there.

Upside down question marks are pretty weird. I wonder if that is how
hyperterminal says you got a "bad" chracter--especially if you are getting
the right number of characters. If so, the only real kind you can get
would be things like framing errors or parity errors. The format for
TNC-DIR mode should be 4800 baud, 8 data bits, no parity, and one stop bit.

Hope that helps, please let us know.

will

-----Original Message-----
From: Michael Barelli "WOMAF [SMTP:barelmic@yahoo.com]
Sent: Friday, September 22, 2000 8:27 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: KPC3 set-up

 Looks more complicated than I thought. Try using the Peet mode with 2400
bd and using !! for Gpshead. This will send data at once every 5 seconds.
 You will not get averaged data but this will work. Try looking at the
data with the terminal mode in Winaprs.

Good luck!

  Bill Ellis <rwsw60@email.sps.mot.com> wrote:
Michael, Thank You for the reply, I tried the @ and still no go. It

seems the KPC3+ (v8.2)and the T-238 are not talking. I started looking at the data from the T-238 on Windows 3.1 terminal program. I get a string every five minutes with the correct numbers of places but strange ASCII. I see a lot of lower case y and w and upside down question marks, weird stuff! I've tried all terminal combos 7, bit 8 bit, parity, bla bla, it seems the baud rate is ok because if I change it the strings get short or not at all. I have tried all formats peet, TNC dir, TNC ltp, computer dir. Do you know if the T-238 converts the wx data to some kind of MicE format or does it look like my board has got a problem? Keep in mind it is a home brew not a TAPR kit. I also replaced the Max 232 chip with the same results. I guess I need to triple check the wiring in this area. I think board wiring is most likely the issue.
Bill N5ZTW

You are currently subscribed to wxsig as: w0maf@arrl.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Michael Barelli WOMAF

Do You Yahoo!?
Send instant messages & get email alerts with Yahoo! Messenger. << File: ATT00001.html >>

begin 600 WINMAIL.DAT
M>)\^(B$#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`<````4D4Z(%MW>'-I
M9UT@4F4Z($M00S,@<V5T+75P`)L(`06 `P`.````T <)`!8`% `4``(`!0`E
M`0$@@ ,`#@```- '"0`6`!0`#@`"``4`'P$!"8 !`"$```!&0D8T0S)!0T,R
M.3!$-#$Q03@U-C P,#!%.#E",T,P.0`N!P$#D 8`< L``"$````+``(``0``
M``L`(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`
M@%%B-QP0EP $>`' ``0```!P```!213H@6W=X<VEG72!293H@2U!#,R!S970M
M=7 ``@%Q``$````6`````< E!,>-K,+T_)#"$=2H5@``Z)L\"0```@`># $`
M```%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&
M$,9+-DH#``<0B @``!X`"! !````90```$))3$PZ249.14E42$525$A%5$Y#
M3D]25$A%0T]-4%5415)!4D5'151424Y'5$A%4DE'2%1$051!+%1(14Y)5$E3
M3$E+14Q95$A!5$E425-.3U1#3TU)3D=/551/1EE/55)"3T$``````@$)$ $`
M``!5" ``40@``#4-``!,6D9U7P;N?3\`"@$#`?<"I /C`@!C:,$*P'-E=# @
M!Q,"@T,`4 [F<')Q,@_I,C,0JP]/?7T*@ C((#NQ"6\R-34"@ J!=@B0I'=K
M"X!D- Q@8P!0#0L#8P!!"V!N9S$P)#,S"Z8@0@,0;#H'"J(*A J 268@;F4H
M:71H!) @&I$@5#Q.0QI0!;$:X@6@;7!<=70:L0K &P!G#[!T30N 9QK3!1!G
M: 5 9/IA`9 L&M(#H!J 'G $(,!L:6ME;'D:T1W@?QYU&V %0!OA'/((8 5
M;W4:0'D(82 &X L1&]%RR0EP8W0?("X@&Q :\2!F:7)M=QQR<VBU"&!L(;!B
M(T$)\&0<\O4@`6@<\F(@P1$P"X !D8)L&P!!4T-)224PEPI 'L(:8&8)X"]C
M"L!^<@MP'+ =8 ^P"' #H'/_)\ !(")A&C$A(1O0`Y$<L9L:40K!82-0&3%Y
M+03PY&]P&P!T;R/Q&P`&D.\:TQW2'J(=.'8&\ &0)W'?`' AL!S@(&,?4W<C
MA@G!KQW@'A E`B8@8000=0> MRBS''(@`G,JP I 8Q;@L1\A97%U!2 J@&0B
M8?I3"X!C+^@<MC# +]$KE+\@(B.6,Y$DI![B(6!A(; _++$G0!RP!" #4AK3
M34'66!O0)+!P(F%#&J Q$/DVYC(S$6 LM00@`B E,.\+@ 0@$6 M,C8B9!\P
M(VBC`: @LBLY5BTC+3P!S0EP<RJ (B!I=A\1*&1W($>$#3H=QIP(:$>L6=.
M;R!S`Z :DF4N&7I5SG `D $`'<!O=P.@,8#/!Y <X#F!`,!R:P0@''+_$3 <
MP1\P/L,H8BXA%P`:L9\K(Q]R!" C< ?@:'DJ@)\`(20(&$'0"-087D$(*\H
MPC]0!4 IT"(UT2(W8><G0"(@!) M+3S#!S$?(?<K(3*.'3AN+\ CT 7 (/'[
M#V)'PW,H9## 'A,Y<1\A_R[1`R 6XBB[+C<DHQ[$-I'^82!C!) #8 ^0(* %
MP JQ_QJ ,5%08R)F!; `P 5 4C'A&Q(M1$E20D $<2-9F#0X, _0-=!U9!X0
MZC@KA&(:@',>$!M@4.7?'A M,@(@(T$JL'!58D [[D@J<Q]B&J!L01 >$ M0
M7RF0#Z >T"E1)F%K&V!W/T [`_ 90!EZ"O0>X#,V?P% %] !0!$P(! B$1!T
M,;8V/&!>4D\=<47S30>0_T9 29!>4QEV761=,0L3769@:2TQ-#0!0![@,<=4
M80S!8?-B($8#81E@S0R28@+1$6!-:0]A'Q 7&1!)41E :4<@5UPG!&0X-S!&
M(%M333A44#HUT&3A(&!C0*1Y82-P;RX;X5T0<O\9A&,@!F ",&.&8S%!,$90
MEQX0!F %,&5*TS(R'A!#`=!4<3@Z,C</X$V)9Z=4;VAW5$%04T#Z5S=04TA4
M*(",$!*! D($<#8'5P9ZAU8D9J(A%H=UMW> "09P)=!_!E.B!+4$/R,R/Q
M="UN)V!O78-<M/,+MAF)($QG`$*!!&!)8?\;XA[@)Q <,"U1#W #H"8@[QJ0

```
M"& =D2)B<A\P)F <]OY0"> %0%-C`_ :D#GP8A!/5($AL"TR=W0A(5*31_]!
M$!J@-> B8QZQ6U(C\RN$MQ]Q`B R464],'=!-2/Q]P6@%P!+XEDHT7N#( (I
M0OYA?0$L\7P%)0(DH7ME+C#_0G!W!0D`=- <\A]Q*U=XL_\:XD6W4V,+@&R@
M1?$1,$O@W1EZ1V<`(; P\B%;GG2!&1D3($5E`00@/')WFP/@7.! :< +<&PN
M/-#O2^ $8%=P&^$^+B!=8G!P_QET9$4>$"*0`' X('X24J+_'3-ID!\@'A!V
M<0B!=@(;`+Y +2-!\7YS/T$B8$E=L!L9@RKA;2OT<)(K("A@=C@N,BDM,QKR
M+>\XL%4`,$8!D&R!PHZQ* '_"L!UXH&5&72"&C:GD30Y@<>$<4%Q!" S+C&#
M6%U1_PG 3_"2@G[CCO6-`5 B?0/_(M ],$) "X <(7MB@O4AU?]*I3EA&D +
M43)0!" E`IBA_1@A91ET)>.2@RKQ*= )`/\@TPD`/L %P"<06:$?,"TR[P?@
M>8-!'T(F+%KU/M,H$_EZ,$DGF9&-!$B1@U@;X?L&X 0@-R\1'H%5`%5Q64'_
M5A4"8)@UIH$>$!Z!CUA4HO\=8'71'J)TT"/!)Q F8"L#_R8@#V&<\1YR&N*8
MI#\Q@#[#_CO4C< `@4+(@`A]Q2)&2@O\/<*-;4C0$("J #["+,1LQ[20P<J\4
M+-!PH?4;YZ]Q_2)@1"K *,):0BL6D31]D?]]`:ZA&N)OX"N$*K(SDA;B]QET
M(/%D0452)@6QH, 'D?<>@8&2-71M'S A= ]P/S+G1O)=426A;3]P@ G@5S#_
M"X$9@R!A/P$>DRG0(W OT?YB"7 'X*R#;%06X';Q+W&>;##!C'*<(8U$36&S
M\/\XLC=R6O:"]49 +]$\L2.0_U60E[-!T00@)B :8'7R*L#_C0%983=A. 8#
M\)C#A$& 0O^3M2[1DH(DHJD1(8/"QG3R/VW!'N>HLB^P0":'DTXU?%I495 9
MB5_'?A))4F/?"' )< (P'R$OL&($\B/03\%C;^,O@7!P=S `P&;^0"<AB0`:
M8([E:[!:`` _\K&>\1541@1.""(PRJB67$-/3 M;^-AX#4W,#>\34"(`<!1
M`9 1,"X%L/^3I='?BK9DMV56TC_(F-9_+]=;&72Q@7X266;B(3__&71H,3\!
M`( !D (P0D!?1/T$("8I,\\T!T"S4WBSV33/7R,)\$F0L5$\/&,P`Q 1<&%!
M5%1J<3 Q+G4=H&T#(#Z)T!ET%"$``>! `````P`0$ `````#`!$0`@````,`
M@!#_____0 `',*"*#?$#)< !0 `(,*"*#?$#)< !"P``@ @@!@`````P ``
M`````$8`````X4````````#``* "" &``````# ````````1@`````0A0``
M`````,`!8 (( 8`````, ```````!&`````%*%``"W#0```P`)@ @@!@``
M````P ```````$8``````84````````>`"* "" &``````# ````````1@``
M``!4A0```0````0````X+C `"P`F@ @@!@`````P ```````$8`````#H4`
M```````#`"> "" &``````# ````````1@`````1A0````````,`*8 (( 8`
M`````, ```````!&`````!B%````````'@`X@ @@!@`````P ```````$8`
M````-H4```$````!`````````!X`.8 (( 8``````, ```````!&`````#>%
M```!`````0`````````>`#J "" &``````# ````````1@`````XA0```0``
G``$`````````'@`]``$````%````4D4Z( `````#``TT_3<``,5@
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

75. [wxsig] RE: rainy night in GA

From: William Beals <will@beals5.com>
Date: Fri, 22 Sep 2000 20:22:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110642-2000.09.22-22.29.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sam:

Yes, I do "borrow" the -9V from the MAX232 for the negative rail on the
LCD. It seemed like cheating, but saved an expensive component and takes
no power so I guess it isn't quite cheating. I live in fear of some kind
of ligtning problem here too. Nothing much to do though other than wait
and see. Hope your TNC is fixable

will

-----Original Message-----
From: Sam Smith [SMTP:sam.smith@ece.gatech.edu]
Sent: Friday, September 22, 2000 8:37 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] rainy night in GA

Actually a rainy day yesterday, with thunderstorms. Zapped my T238 and
TNC. Didn't hurt the radio at all.

TNC and radio are outside with the sensors. 200' of cable back to the
T-238. MAX232 was zapped in the T-238 - replaced it and it seems OK
now. LCD display wasn't working so I feared the worst, but it turns
out the MAX232 generates -V for the contrast, so replacing the 232
brought the display back to life. Weather sensors were fine. No damage
to anything else in the shack.

TNC (KPC3+) is another problem, haven't fixed it yet.

Maybe it's not such a good idea putting the TNC outside...

--

Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(B8#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`>````4D4Z(%MW>'-I
M9UT@<F%I;GD@;FEG:'0@:6X@1T$`]PD!!8 #``X```#0!PD`%@`4`!8`&P`%
M`$ !`2" `P`.````T <)`!8`% `4``L`!0`N`0$)@ $`(0```$9&1C1#,D%#
M0S(Y,$0T,3%!.#4V,# P,$4X.4(S0S Y`#('`0.0!@!8" ``(0````L``@`!
M````"P`C```````#`"8``````L`*0```````P`N```````#`#8``````$ `
M.0! !=D=!27 `1X`< `!````'@```%)%.B!;=WAS:6==(')A:6YY(&YI9VAT
M(&EN($=!``````@%Q``$````6`````< E!1W9K,+U`)#"$=2H5@``Z)L\"0``
M'@`># $````%```4TU44 ``````>`!\,`0```! ```!W:6QL0&)E86QS-2YC
M;VT``P`&$#P#12 #``<0800``!X`"! !````90```%-!33I915,L241/(D)/
M4E)/5R)42$4M.59&4D]-5$A%34%8,C,R1D]25$A%3D5'051)5D5204E,3TY4
M2$5,0T1)5%-%14U%1$Q)2T5#2$5!5$E.1RQ"5513059%1$%.15A014X``````
M`@$)$ $````Z!0``-@4``'4```!,6D9U%9_JW#\`"@$#`?<"I /C`@!C:,$*
MP'-E=# @!Q,"@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+
M@&3:- Q@8P!0"P-C`$$+8,!N9S$P,S,+I@8!7&TZ"J(*A J 60>0+( @22!D
M;R B!N "<@-@=R(@=&AE8" M.58@`U(9$TWP05@R,Q%@`A %P!DB@&YE9V%T
M:7890!YR"W #( (@&1-,0T1<+B 8, 5 #Z!E!X!DL"!L:6L90 ]@91M1TQ8`
M&"!B=1SA81N '5#Q`Y%E>' )\ "0&X$%H/QM< (@"? %0 !P'5 !D-L=D 0@
M;AAP( !W!) <\-L8<!A 9PI0!!%I!4 $`.1N)P5 <74B4!VH'*(_'6$;@0N
M&9 =X 7 ;V8[(9$'@" 4LB32'7!G=+\#`!8`(3 #8 )@'2 @&3"3"7 9$&]O
M'*%.;QD@]28R;140:"<Q&%(9( A@OF<H4">Q(7$9( .1=PMP)R!4'0$<H4AO
M'U @>6$(82!43D,B<1F0:=YX`: FL!<Z`_!L"5 72?,*]!UP,S8!0!6@`4 F
M<<DC$&-T$'0Q-AE0,")Z3P409PN !T %T"(18?QG93 C%S8O-"\!"Q,O-F!I
M+3$T- % '7 Q'#@P`4 ,T#/#8B!&MP-A%R ,DF(6TP8`;2)0@2A06U--5% Z
M'J#H;2YS-C) !9 JH!M!R060:"X)@'5=%S4T\ \&8 (P-5<U$&ED87DO&" &
M8 4P'2!B(7$R,@<8( '0-% @.#HS-R4/X$TX=U1O-5=406!04B!76 8`'U!C
MKP<Q&# ","<!<P5 1P-@Q'5P.'AU8FHO83572%MW> "09UT;HFXV>1L0)?!H
M(F$#H$=!?S'/,MHNA NV%T,*XPJ 0=4O<'4'0&Q!8&%!%3H!?RL@/H$$D#H#
M`_ V41D@=4\4T 20/I %L&US'*!:K&%P'U =4&U!8%0:8-XX(&(7-"N!'*!$
M.? BHL](```@&1,;L&1I&' ;4/L>\"U +A<Z*X(@<DNU)Q']"&!T`) !`$>6
M&4 /H " UP6P2+$[,2<DTF,L(AY0W0#0:RAB&2%*!2U)D1R@]QHU*? $('I(
M]"1A&2)1\_\94!N@.F +8#>04V$@5")1LQT"!"!/2Q<T(1!W'*!_''$84 0`
M"U%!8%+1(J)W_P6P%+$F4"&C))(=01DB6 '_/I >1")11< $H \P%T-.8;\9
MZC%0&R ;L",0!" M&8'_&K4%H (P&[!9LB&A5'0F,O<9(AIA%S1B/M%!HADB
M5Q;O4.8=<"20'*!7'>$I8D]U_RG@)P(K\!L@'* GH$:A`, O,5 7-"AQ`'!Y
M)\1E;#L/H%-V<P]P40!,?RA+X%!#,RLI*[(`<"E$_R9U&" /<!N (J(K\534
M1O"Z=&8K33H0.K B02<@\O<<X2@R1C!G)U!380$`1C"^<!YP'@)3I"N13F4N
M;G"G1-LQIC7H3C0:,% 7--Q'906P,*!&,%0W\1@@H$5#12 P$_ P&" \0705
MX0&0&"!"$"!5.E-S8#,6,5\E0;!T<' Z+R]W=. X(#>J+_9U#Z /D"\VX70?
M-C 4T,]7, 40(Z$?T2]^-N<7.NTQEUD(8$X38PAP"7 ",/M&`6OP8@3R.K @
MD1AP0+,Y'O!S.BG@.J$'0'- _Q_2=@(;@'A"2@48<$@0>Z?_3V(>X1Y0%>%1
M$!T@&\)A(AL=X!N +4"S,[ U-S#X-TU '7 ^D$BP`9 1,"XN<6$7.A'Q`(1
M```#`! 0``````,`$1 ``````P" $/____] ``<P('#!S 0EP % ``@P('#!
MS 0EP $+``" "" &`````# ````````1@`````#A0````````,``H (( 8`
M`````, ```````!&`````!"%`````````P`%@ @@!@`````P ```````$8`
M````4H4``+<-```#``F "" &`````# ````````1@`````!A0```````!X`
M(H (( 8``````, ```````!&`````%2%```!````! ```#@N, `+`": "" &
M``````# ````````1@`````.A0````````,`)X (( 8``````, ```````!&
M`````!&%`````````P`I@ @@!@`````P ```````$8`````&(4````````>
M`#B "" &`````# ```````1@`````VA0```0````$`````````'@`Y@ @@
M!@`````P ```````$8`````-X4```$`````!`````````!X`.H (( 8`````
M`, ```````!&`````#B%```!`````0`````````>`#T``0````4```!213H@
.`````,`#33]-P``,PJ%
`
end


---
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

76. [wxsig] Re: KPC3 set-up

From: William Delbert Ellis <n5ztw@texas.net>
Date: Sat, 23 Sep 2000 13:05:02 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110712-2000.09.23-13.20.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William, Thanks for the info, got the scope going now. I'm seeing data bursts on 2 and 6 also.(Me thinks this is a problem) Are pins 15 and 16 used? I'll try the Max web site for data sheets on the 232. I checked the wiring and it all is correct. I'll keep working on it today. Again thanks for the help.
Bill N5ZTW

William Beals wrote:

> Bill:
>
> If neither the TNC nor the computer are getting the right data, then it is
> likely that it is not coming out of your board correctly. The firmware
> should be sending nothing but printable ASCII plus linefee/carraige return
> stuff. If you can get near a silly-scope to see if the data is the right
> voltage and timing that would be great, but I assume you are not so luckily
> equipped. Since you are getting some data it could be something like bad
> volrages from the MAX chip. Check the MAX232 voltages on pins 2 and 6.
> They should be about +9V and -9V respectively. If not, something weird is
> going on there.
>
> Upside down question marks are pretty weird. I wonder if that is how
> hyperterminal says you got a "bad" chracter--especially if you are getting
> the right number of characters. If so, the only real kind you can get
> would be things like framing errors or parity errors. The format for
> TNC-DIR mode should be 4800 baud, 8 data bits, no parity, and one stop bit.
>
> Hope that helps, please let us know.
>
> will
>
> -----Original Message-----
> From: Michael Barelli "WOMAF [SMTP:barelmic@yahoo.com]
> Sent: Friday, September 22, 2000 8:27 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: KPC3 set-up
>
> Looks more complicated than I thought. Try using the Peet mode with 2400
> bd and using !! for Gpshead. This will send data at once every 5 seconds.
> You will not get averaged data but this will work. Try looking at the
> data with the terminal mode in Winaprs.
>
> Good luck!
>
>   Bill Ellis <rwsw60@email.sps.mot.com> wrote:
> Michael, Thank You for the reply, I tried the @ and still no go. It
> seems the KPC3+ (v8.2)and the T-238 are not talking. I started looking
> at the data from the T-238 on Windows 3.1 terminal program. I get a
> string every five minutes with the correct numbers of places but strange
> ASCII. I see a lot of lower case y and w and upside down question marks,
> weird stuff! I've tried all terminal combos 7, bit 8 bit, parity, bla
> bla, it seems the baud rate is ok because if I change it the strings get
> short or not at all. I have tried all formats peet, TNC dir, TNC ltp,
> computer dir. Do you know if the T-238 converts the wx data to some kind
> of MicE format or does it look like my board has got a problem? Keep in
> mind it is a home brew not a TAPR kit. I also replaced the Max 232 chip
> with the same results. I guess I need to triple check the wiring in this
> area. I think board wiring is most likely the issue.
> Bill N5ZTW
>
> ---
> You are currently subscribed to wxsig as: w0maf@arrl.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> Michael Barelli WOMAF
>
> ---------------------------------
> Do You Yahoo!?
> Send instant messages & get email alerts with Yahoo! Messenger. << File:
> ATT00001.html >>

>
>   Name: WINMAIL.DAT
>   WINMAIL.DAT   Type: unspecified type (application/octet-stream)
>   Encoding: x-uuencode
>
> ---
> You are currently subscribed to wxsig as: n5ztw@texas.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

77. [wxsig] Re: KPC3 set-up

From: William Delbert Ellis <n5ztw@texas.net>
Date: Sat, 23 Sep 2000 13:16:01 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110714-2000.09.23-13.31.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ok a quick search of the WEB tells me pin 16 is +5v and pin 15 is gnd! I'm sure
this is the problem as I did not wire these. (per schematic) I'm going to go
wire it now and check it out. I never thought it would be this easy to fix.
This has been a great project and y'all did a fine job. I have not built a
project in a long time that I have enjoyed so much...
Bill N5ZTW

William Beals wrote:

> Bill:
>
> If neither the TNC nor the computer are getting the right data, then it is
> likely that it is not coming out of your board correctly. The firmware
> should be sending nothing but printable ASCII plus linefee/carraige return
> stuff. If you can get near a silly-scope to see if the data is the right
> voltage and timing that would be great, but I assume you are not so luckily
> equipped. Since you are getting some data it could be something like bad
> volrages from the MAX chip. Check the MAX232 voltages on pins 2 and 6.
> They should be about +9V and -9V respectively. If not, something weird is
> going on there.
>
> Upside down question marks are pretty weird. I wonder if that is how
> hyperterminal says you got a "bad" chracter--especially if you are getting
> the right number of characters. If so, the only real kind you can get
> would be things like framing errors or parity errors. The format for
> TNC-DIR mode should be 4800 baud, 8 data bits, no parity, and one stop bit.
>
> Hope that helps, please let us know.
>
> will
>
> -----Original Message-----
> From: Michael Barelli "WOMAF [SMTP:barelmic@yahoo.com]
> Sent: Friday, September 22, 2000 8:27 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: KPC3 set-up
>
> Looks more complicated than I thought. Try using the Peet mode with 2400
> bd and using !! for Gpshead. This will send data at once every 5 seconds.
> You will not get averaged data but this will work. Try looking at the
> data with the terminal mode in Winaprs.
>
> Good luck!
>
>   Bill Ellis <rwsw60@email.sps.mot.com> wrote:
> Michael, Thank You for the reply, I tried the @ and still no go. It
> seems the KPC3+ (v8.2)and the T-238 are not talking. I started looking
> at the data from the T-238 on Windows 3.1 terminal program. I get a
> string every five minutes with the correct numbers of places but strange
> ASCII. I see a lot of lower case y and w and upside down question marks,
> weird stuff! I've tried all terminal combos 7, bit 8 bit, parity, bla
> bla, it seems the baud rate is ok because if I change it the strings get
> short or not at all. I have tried all formats peet, TNC dir, TNC ltp,
> computer dir. Do you know if the T-238 converts the wx data to some kind
> of MicE format or does it look like my board has got a problem? Keep in
> mind it is a home brew not a TAPR kit. I also replaced the Max 232 chip
> with the same results. I guess I need to triple check the wiring in this
> area. I think board wiring is most likely the issue.

> Bill N5ZTW
>
> ---
> You are currently subscribed to wxsig as: w0maf@arrl.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> Michael Barelli WOMAF
>
> ---------------------------------
> Do You Yahoo!?
> Send instant messages & get email alerts with Yahoo! Messenger. << File:
> ATT00001.html >>
>
>   Name: WINMAIL.DAT
>   WINMAIL.DAT   Type: unspecified type (application/octet-stream)
>   Encoding: x-uuencode
>
> ---
> You are currently subscribed to wxsig as: n5ztw@texas.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

78. [wxsig] T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sat, 23 Sep 2000 20:11:28 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110747-2000.09.23-19.20.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Folks,

Understandably, the 7805 on my T238 runs VERY hot when the backlight is on.
No biggy, just put a larger heat sink on it methinks. So I attached the 7805
to the 6"x8" metal cover on a Radioshack instrument case.

Well it sort of worked. I no longer scald myself on the regulator but the
entire sheet is still VERY hot. So I tried running the light via a switch;
no use in burning the light whilst I'm not looking at it or in daylight
right? Only problem is that the contrast differs when the light is off to
the extent that one cannot read the display.

Also, I'm now getting not wind speed and now direction. Plus, my temp is
constantly reading 32F which I know cannot be right for this time of year in
NYC.

Any ideas?

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

79. [wxsig] Davis Weather Wizard II for sale

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sat, 23 Sep 2000 20:15:31 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110748-2000.09.23-19.24.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm making a brave assumption that its ok to do this here.

I have a Davis Weather Wizzard II with the Rain Bucket and PC addons. Only
been up for the summer. Suitable for APRS use with PC etc. I'm looking for
$180 + shipping. Can do cheque in mail or PayPal.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sat, 23 Sep 2000 19:00:59 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110750-2000.09.23-20.09.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Mark Phillips <g7ltt@g7ltt.com>
Subject: [wxsig] T238 runningHOT with the LCD backlight on

> Understandably, the 7805 on my T238 runs VERY hot when the backlight is
on.
> No biggy, just put a larger heat sink on it methinks. So I attached the
7805
> to the 6"x8" metal cover on a Radioshack instrument case.

I have run one of mine overnight with the regular heat sink and it worked fine. The heat sink is quite warm, but not scalding hot.

> Well it sort of worked. I no longer scald myself on the regulator but the
> entire sheet is still VERY hot. So I tried running the light via a
switch;
> no use in burning the light whilst I'm not looking at it or in daylight
> right? Only problem is that the contrast differs when the light is off to
> the extent that one cannot read the display.

I did the same thing with a switch to turn the backlight off and on. I see no difference in the contrast of the display when the backlight is on or off.

> Also, I'm now getting not wind speed and now direction. Plus, my temp is
> constantly reading 32F which I know cannot be right for this time of year
in
> NYC.
>
> Any ideas?

You might measure the regulated voltage and see if it changes when you unhook the 7805 from the case. If so, it might be a good idea to electrically isolate the 7805 from the case (perhaps with mica washers).

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] QC Wx Program

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sat, 23 Sep 2000 21:42:00 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110764-2000.09.23-21.46.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ, I guess there is some confusion over "decimal degrees". I have verified my numbers and they are accurate for 38 degrees 37 minutes and .77 decimal seconds north by 92 degrees 20 minutes and .6502 decimal seconds West.

I reported 38.6295, -92.34417 but for some reason I still show up in northwest Missouri. Are you sure the don't need decimal seconds, which would be expressed as 3837.77N, 9220.65W?

I can only guess what there software would do with the numbers, but I think they are being interpreted as approximately 39 degrees 2.95 minutes North by 92 degrees 34.417 minutes West. This supposes the are treating the .6295 as an additional 1.295 degrees and .34417 as 34.417 minutes West instead of the 20 minutes West it actually is.

Ideas?

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

82. [wxsig] Re: QC Wx Program

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sat, 23 Sep 2000 21:31:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110772-2000.09.23-22.39.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
Subject: [wxsig] QC Wx Program

> Russ, I guess there is some confusion over "decimal degrees". I have
> verified my numbers and they are accurate for 38 degrees 37 minutes and
.77
> decimal seconds north by 92 degrees 20 minutes and .6502 decimal seconds
> West.
>
> I reported 38.6295, -92.34417 but for some reason I still show up in
> northwest Missouri. Are you sure the don't need decimal seconds, which
> would be expressed as 3837.77N, 9220.65W?

Rich,

The QCMS people were quite specific that they need decimal degrees. For
your latitude of 38 degrees, 37 minutes, 0.77 seconds, wouldn't the decimal
degrees be

38 + (37 + 0.77/60) / 60   = + 38.61688 degrees (north latitude)

I think that the longitude of 92 degrees, 20 min, 0.65 seconds would be

92 + (20 + 0.65/60) / 60   =   - 92.33351 degrees (west longitude)

I don't have a book with the equations here at home and am making a stab at
them. My memory could be bad, but these look right. Note that 38 deg, 59
min, 60 sec would be

38 + (59 + 60/60) / 60   =   39.00000 degrees

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

83. [wxsig] Re: KPC3 set-up

From: William Beals <will@beals5.com>
Date: Sun, 24 Sep 2000 08:28:59 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110845-2000.09.24-10.14.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

You got caught by a schematic convention that we argued about a long time
ago, sorry. On some schematic programs the creators of the symbols think
that adding the power and ground pins create un-necessary clutter to the
schematic and don't bother to put them on the symbol. The creator of the
MAX232 symbol was someone who thought that way. I think the other way and
created my symbol for the 6808 with power and ground pins. The schematic
is not consistent.

Unfortunately, the symbols with power and ground pins create problems when

you are using the schematic to build another board and don't see those
assumptions.

Sorry for the misleading schematic.

will

-----Original Message-----
From: William Delbert Ellis [SMTP:n5ztw@texas.net]
Sent: Saturday, September 23, 2000 12:16 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: KPC3 set-up

Ok a quick search of the WEB tells me pin 16 is +5v and pin 15 is gnd! I'm
sure
this is the problem as I did not wire these. (per schematic) I'm going to
go
wire it now and check it out. I never thought it would be this easy to fix.
This has been a great project and y'all did a fine job. I have not built a
project in a long time that I have enjoyed so much...
Bill N5ZTW


```
begin 600 WINMAIL.DAT
M>)\^(BT/`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, ,````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$`````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````V-D`02 `0`<````4D4Z(%MW>'-I
M9UT@4F4Z($M00S,@<V5T+75P`)L(`06 `P`.````T <)`!@`" `<`#L```!7
M`0$@@ ,`#@```- '"0`8``@`' `[````5P$!"8 !`"$```!$,CE&.#DY-D5&
M.3%$-#$Q03@U-C P,#!%.#E",T,P.0`?!P$#D 8`B <``"$````+``(``0``
M``L`(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`
MX)\?QS,FP $>`' ``0```!P```!213H@6W=X<VEG72!293H@2U!#,R!S970M
M=7 ``@%Q``$````6``````< F+_O9EHF?TY'O$=2H5@``Z)L\"0```@`>#  $`
M```%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&
M$*/5*K,#``<0U0,``!X`"! !````90```$))3$PZ64]51T]40T%51TA40EE!
M4T-(14U!5$E#0T].5D5.5$E/3E1(051714%21U5%1$%"3U5404Q/3D=424U%
M04=/+%-/4E)93TY33TU%4T-(14U!5$E#4%)/1U)!35-42$4``````@$)$ $`
M``!P! ``; 0``* &``!,6D9U`O $WP,`"@!R8W!G,3(U/C(`] 'W`J0#XP(`
M8VC!"L!S970P( <3`H-#`% /IG!R<3(0IGVS"H (R" ["6\.,#4"@"4*@78(
MD'=K"X!D-&T,8&,`4 L#8P!!"V!ND0X0,#,S"Z8@0@,07&PZ"J(*A J 60A@
M( 1G;P5 8V%U9VA!!4!B>2!A( 3P:+IE`,!T#> 9, (@=@GP,QI@`B @=! P
M!4!W96D9T')G"E!D&= &X'7_!4 9X D`%L ;0 =Q&= 9``8L&? %L')Y+B @
MOD\#H!VP'3$:"!'P;PG O&%M!" ;4!NP!0!E&E#3!; $(&]F']-S!L,?PL4+
M@&L;1&%D9 N '/'Y'_%P;QN@!< `<!P@"<#["& C<7 +@ 0@(",;L"/0;"UN
M!9 'D',*P!G 8W\*0 ) (S$@8"#4&A<C8F2]`B G&9$9$!H@)@-P''&]'^%M
M(* ;,B$&'@%4'_C!(*9-05@R,Q(@(20]&Y!A!" >8@(@&[!W:*\F,@A@&7(;
M5&$=\4DAE[\;L"?D+>$C4R1D'"!M&< /*Z4"$"8!'_$V.# X_1N0:1M0(O\D
M`RG5&@@$`-P@;AD2`B `D',DH (PTQX!& I5;C#Q="/0))'\;'D=D"#J,<\C
MSQJ1`F#O&C X`1H@`Z!Y&-$*P"2QSP"0(I4:""8A8G4#$!PA_S2A* (&X L1
M)RD08!NP+1'G$& 9T 00=6T%,!L1,U#M& I3'<(PYVT$`#J (E!_(H(:!T!+
M`_ 7T!@*"O1L^&DS-@% %F !0!]1)*"$8W01-#$V("U''GI/!1!G"X '0 70
M)3)G?F5''Q@&1A1%X0L31A9IL"TQ-#0!0$5@,3& QP% #-!*HV(@1@-A%_!U
M#))B$)!7%\$',"C@1&TW$&($D 5 14SA!"!;`%--5% Z;C5ZJ'1W0"2@>"P@
M+B4`_'1=& 5+T 9@`C!,-P80_S; "R M\!V0!F %,!HP37%>("M@'9 !T$LP
M( X@.DE&T5!-3X=4;TPW5*A!4%),L%@&`' %D+\',2X@`C $D >0!4!'.2%B
M<$^(=6)J1D%,-ULD=W@`D&==!_!E.B @2U!#,S[A="U_5C=)'T8S160+MA@3
M-:5/ZR'@&>!Q/2!C(> 08 K XQ @(*9714(;0#<0(7$?'3$D$5*@1N T<2LU
M=JLXPU\C-31B9Q60(2X@_B<HX#^P"7 8!"&A!" T<?\BPSI4/X$N(2)P'" T
MH@/P[SMQ'^$08!X`*%4`!< :!_XI82,9`"*#)C 9`$.F.W'_.# TD0?@+Y,:
M(%U!9X$<8;\N$B4`&M Q$BTT9X%W"&#_/4%-<"&2!" @0"$@)A)*</YX0$4J
M`#1Q$# $($UP.O$_&> )P1MQ'U%7$CC#>2>_!T #(&.B&>!*<"RA:CI@_RX2
M$# :T#23/1(<@1@$;::_7S$<JAM3;\4)\&]P>1P1YQVP,$ 5T&@N=& 8!!>R
MX0>P-5I45T1."H 2L0(`=O #`! 0``````,`$1 ``````P" $/____] ``<P
M@#JBR"XFP % ``@PX)\?QS,FP $+``" "" &`````# ````````1@`````#
MA0````````,``H (( 8``````, ```````!&`````!"%`````````P`%@ @@
M!@``````P ````````$8`````4H4``+<-```#``F "" &`````# ````````
M1@``````!A0````````!X`(H (( 8``````, ```````!&`````%2%```!````
M! ```#@N, `+`": "" &`````# ````````1@`````.A0````````,`)X (
```

```
M( 8``````, ```````!&`````!&%`````````P`I@ @@!@``````P ``````
M`$8````&(4```````>`#B "" &`````# ```````1@`````VA0```0``
M``$`````````'@`Y@ @@!@``````P ```````$8`````-X4```$````!````
M`````!X`.H (( 8``````, ```````!&`````#B%```!`````0`````````>
=`#T``0```4```!213H@``````,`#33]-P``NLZ%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

84. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: William Beals <will@beals5.com>
Date: Sun, 24 Sep 2000 08:30:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110846-2000.09.24-10.15.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

Just want to make sure that things were OK until you added the heat sink.
 If adding he heatsink is causing the problem, then Russ is right, it is
probably a grounding issue that is being created by attaching the heatsink
to the case. The tab of the heatsink is electrically connected to ground,
so that would imply that for some reason the case is not. When you power
up the unit I do some santiy checking on the bus and report if the bus is
either shorted to ground or completely open (no sensors) and report this
briefly to the LCD. Do you see any messages? If you do, that will give
you a hint where to look as well.

will

```
begin 600 WINMAIL.DAT
M>)\^(C@/`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, ,````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````V-D`02 `0`Z````4D4Z(%MW>'-I
M9UT@4F4Z(%0R,S@@<G5N;FEN9TA/5"!W:71H('1H92!,0T0@8F%C:VQI9VAT
M(&]N`/\2`06 `P`.````T <)`!@`" `>`````````>`0$@@ ,`#@```- '"0`8
M``@`'@``````'@$!"8 !`"$```!%-3E&.#DY-D5&.3%$-#$Q03@U-C P,#!%
M.#E",T,P.0`C!P$#D 8`E 4``"$````+``(``0````L`(P```````P`F````
M```+`"D```````,`+@```````P`V``````! `#D```RZZS,FP $>`' ``0``
M`#H```!213H@6W=X<VEG72!293H@5#(S."!R=6YN:6YG2$]4('=I=&@@=&AE
M($Q#1"!B86-K;&EG:'0@;VX````"`7$``0```!8````!P"8QH^>6B9_FD>\1
MU*A6``#HFSP)```>`!X,`0````4```!33510`````!X`'PP!````$ ```'=I
M;&Q 8F5A;',U+F-O;0`#``80M"(?GP,`!Q#W`0```@`($ $```!E````34%2
M2SI*55-45T%.5%1/34%+15-54D542$%45$A)3D=35T5214]+54Y424Q93U5!
M1$1%1%1(14A%051324Y+249!1$1)3D=(14A%051324Y+25-#055324Y'5$A%
M4%)/0DQ%30`````"`0D0`0```%P"``!8`@``* ,``$Q:1G6$4<C3/P`*`0,!
M]P*D`^,"`&-HP0K <V5T," '$P* )GT*@ C((#L);S(UEC4"@ J!=@B0=VL+
M@+1D- Q@8P!0"P-C`$&!"V!N9S$P,S,+IG,%T K :SH*H@J$"H!*-'5S!4!W
M`' %0'1OPB `P&ME',(<!=P5G0/<!;Q: N 9P0@=\,$D!=P3TL@=0(P`Q&B
M>0A@(&%D`0!D%]$/%W :,!@!`)!N:RX@^"!)9AFR&%$:41I3&K+B( 0`(&-A
M%H ;@AHBQG #8 )@96TL&A(#H!Y2%H $(!R!!1!G:'0]'>!I!4 <@1UR`:!L
M>?T9L" )P A@$T ;@@0!"E#S%]0<@6)E&X(%`!IQ&?'^8B 1`D `T!A"&A<<
M,Q<1;QHB'+ /H!KQ5!HQ`9$@+F\;,".+'(%E';!C=)L%$!RP;" !!:!N;B<!
M;QGR%R @5!W@<R1B& %W_0A@;!H`!W +4" 0%^,"$/\%P"D`!X >P!IP*0`#
MH"2&T1QR;F]T&O%7'A(9@NQP;QBA&1!P&A,9(!]!6$D@9!<@*M-S%M%INR>1
M&C!C$R$;H"ME8A: _QFP$T K$2U `" <<"7$,'+O)K(?0!HP*K%H"1$H*B6@
M/P7 !: I\0^P)N @$&]P?1XA*"Q0%X )\"D`#Y I;S"J&#$AL0B!9BH2)&1,
M]$-$&O%$%R 9@@^@%W"O`' @$ >!+P!G!Y _&P,_&8(N@!WB*5(#$ ,@9VG^
M=A=P&8,:4 N %J$R<1?!>Q<@"0!O'& DT!B1)W N+Q6Z.L(5NA!A`#]P`P`0
M$ `````#`!$0``````,`@!#_____0 `',*"B;R4Q)L !0 `(, `,NNLS)L !
M"P``@ @@!@``````P ```````$8``````X4````````#``* "" &``````#
M`````````1@`````0A0````````,`!8 (( 8``````, ```````!&`````%*%
M``"W#0```P`)@ @@!@``````P ```````$8``````84````````>`"* "" &
M``````# `````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````
MP ```````$8`````#H4````````#`"> "" &``````# `````````1@`````1
```

```
MA0````````,`*8 (( 8``````, ```````!&`````!B%````````'@`X@ @@
M!@``````P ```````$8`````-H4```$````!`````````!X`.8 (( 8``````
M`, ```````!&`````#>%```!`````0`````````>`#J "" &``````# `````
M````1@`````XA0```0````$`````````'@`]``$````%````4D4Z( `````#
)``TT_3<``/$I
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

85. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 24 Sep 2000 19:01:51 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110881-2000.09.24-18.10.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Nope, no difference if the heat sink is on or off. Its almost like there's a
volts drop but I haven't tested that theory.

Also, since enclosing the board into the box the display reads a constant 32
deg and no wind. Could that just be a reset that's needed?

Mark

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 10:30 AM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> Mark:
>
> Just want to make sure that things were OK until you added the heat sink.
> If adding he heatsink is causing the problem, then Russ is right, it is
> probably a grounding issue that is being created by attaching the heatsink
> to the case. The tab of the heatsink is electrically connected to ground,
> so that would imply that for some reason the case is not. When you power
> up the unit I do some santiy checking on the bus and report if the bus is
> either shorted to ground or completely open (no sensors) and report this
> briefly to the LCD. Do you see any messages? If you do, that will give
> you a hint where to look as well.
>
> will
>
>

>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

86. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: William Beals <will@beals5.com>
Date: Sun, 24 Sep 2000 17:20:48 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110882-2000.09.24-18.22.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

Now I'm even more confused. I assume it was working at one point, then
along the way something happened to make the unit quit reporting good data.
 Was it putting the thing in an enclosure? If you have not cycled power
that is always a good thing to try and see if it clears things up. Cycling
power will also restart the software so it will do a bus check on power-up
and tell you if it finds anything major wrong with the software. If it
does it will flash up a message as described below. BTW, could it be
reporting 31 degrees? That is a magic number, 32 isn't.

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Sunday, September 24, 2000 5:02 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

Nope, no difference if the heat sink is on or off. Its almost like there's
a
volts drop but I haven't tested that theory.

Also, since enclosing the board into the box the display reads a constant
32
deg and no wind. Could that just be a reset that's needed?

Mark

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 10:30 AM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> Mark:
>
> Just want to make sure that things were OK until you added the heat sink.
> If adding he heatsink is causing the problem, then Russ is right, it is
> probably a grounding issue that is being created by attaching the
heatsink
> to the case. The tab of the heatsink is electrically connected to
ground,
> so that would imply that for some reason the case is not. When you power
> up the unit I do some santiy checking on the bus and report if the bus is
> either shorted to ground or completely open (no sensors) and report this
> briefly to the LCD. Do you see any messages? If you do, that will give
> you a hint where to look as well.
>
> will
>
>

>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(@L7`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.```````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````

```
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`Z````4D4Z(%MW>'-I
M9UT@4F4Z(%0R,S@@<G5N;FEN9TA/5"!W:71H('1H92!,0T0@8F%C:VQI9VAT
M(&]N`/\2`06 `P`.````T <)`!@`$0`4`# ```!-`0$@@ ,`#@```- '"0`8
M`!$`$0`,````)@$!"8 !`"$```!&-C P-3,T1#-%.3)$-#$Q03@U-C P,#!%
M.#E",T,P.0#T!@$#D 8`X D``"$````+``(``0````L`(P```````P`F````
M```+`"D```````,`+@```````P`V``````! `#D``)JU$GXFP $>`' ``0``
M`#H```!213H@6W=X<VEG72!293H@5#(S."!R=6YN:6YG2$]4('=I=&@@=&AE
M($Q#1"!B86-K;&EG:'0@;VX````"`7$``0```!8````!P"9^$K5-4P#WDCX1
MU*A6``#HFSP)```>`!X,`0````4```!33510``````!X`'PP!````$ ```'=I
M;&Q 8F5A;',U+F-O;0`#``80RAU:C0,`!Q W!P```'@`($ $```!E````34%2
M2SI.3U=)345614Y-3U)%0T].1E53141)05-354U%251705-73U)+24Y'051/
M3D503TE.5"Q42$5.04Q/3D=42$5705E33TU%5$A)3D=(05!014Y%1%1/34%+
M151(155.20``````"`0D0`0```*4&``"A!@``G0L``$Q:1G7((!8!/P`*`0,!
M]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U
M2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@P&YG,3 S,PNF!= Y"L!K.@JB
M"H0*@$YO@0?@22=M(&5V"? 6( 1@"7 @!:!N9G61#Z!D+B 8,"!A!!#2=0>
M(&D%0'<9\!J >P6P%+%G&> %0 (@&0!P@F\+@'0L('1H&*$?!T "(!LP'#$:
M@7D@<YL#< ^P:!L2#W!P< GPRPF '"!O&,!A:QD``.+F=0,`!4!Q=1IA"7 ;
MP),`(!L29V\$<"!D&U":81FA5QJA&F%P=0) ?QL2'.(=I N &> #H GP8Q<)
M`!H0"7 _&;%F('E'"& =\1B0(&YO!4!C[GDC8!YA&\!W!) <(1M1?P0`''$=
M(28Q((0=I!Z1=/YR'4 `<!YP#Z :0200&F%/)2$/@2)T!"!U<!FA0^\E$1L2
M)70#\&P#( = '6#]'^%S`9 `(!S3'6 !@!J0;QCQ*V$:8BL"9!Z@)L!B9QE@
M&1 <0&-K&W$E9"US*< G\W1E*Q$D,BB$9K,4P28Q;GD=I # :@6Q_G<#8!LA
M`_ <,"P+&:(HD]<MD >1+19F"V!S,E O$N,8P >0<V%G&0`:H0$`703R8AYA
M-E )`'<9H4+,5%<<$ 6@=6P><!IALS90'^DS,37A"<)S(]'&5"7F'K%G:6,D
ML!H@-390<AP0,Q%@! !N)WQT+A=**O(72@KT*D S?C8!0!6@`4 1,"30!9!T
MH1!T,38@+3]B3P40_3I0;@= != U5#]C%T8^= <^00L3/G9I+3$T-.,!0"I
M,3@P`4 ,T$,#N&(@1@-A%S ,DF(6U#P@4!VP*Q %( 0@6U. 3510.F<W; )
MRD!&8RX%H&U=%T5$,+<&8 (P1)=3'U @X'D<$(L&8 4P93JR(#(T'!!#`=!#
MD" U.C 18% 234=G5&]$EU1!4-I2(4!8!@`>,&,',1@PYP(P!) KH2!''V I
MP$=H&'5B:CZA1)=;=WA)`)!G70?P93HY@#(\,S@?X!]0`P`6`$A/8E0R&$Q#
M1"W0`-!K^2I 9V@;8D$/0AH]Q NV_Q=3"N,7XAXP'! DP"#0!I#^9DU1(U H
M8QSB'$ ;40"0OFXN8"8A+H$%L2Q@9AF@_$ET)C($8$V!*D >Y EPMB<F,1=$
M=@;P69%D`V#_+R MX 5 &= D<CMA+W$KL*\>8B7B'#$%L'D[FT$K4?\<$%A1
M5V$C1"(&!N +$2+1VR>28&-X'--6X',+41U _0EP83"B&1(KL0(P.P$71/\X
M\2?S5K$#\!30&: (43>1_273:AE@-],FP"N1#[ EP^]:T1N0"8 )@#\72A;R
M/*Y["H _8R _OC]4%T1$4R#4(E=%DF$88$(I`"M0:"(@/"KR0#90*T$U_4<2
M/A=$2W%L0$PO33MM,LU/LD J0"NP<RX!D!$P^BX%L&=N54?S2+])R18@_#HS
M#]%*U4Z63X]0GU&ONU*Y%V@^%NIN57K 2F7B_QJ08V$>EB.2768I<R61&0#\
M3TL?02! +[1BH&=Q5[Q_.Y5ZP"/R?W$=PU?D6%9C?F$98"(&/F$"8$F '!52
M_QE@(7$$(#_!4I <$!IA! #W>F:#D@&@;"?A((!-P130_R*C&@%]=28A-E ;
M$@4`6!'_-F(GX0) `- G1('I>F9A%?^"T ^@&:$YD![Q`:!9(8H+_R82+Y ^
MH040@M K$!U &2'O&Y ^L!YDAN0L>F8K8273^QK0-X-M"U =0"73`A %P/\=
M8F)R'6 #H(N&)A(DP2$B_QQ")#(E<WIF+Q$?%QG0+9'_DD,U<'[ACI$N,AL2
MDM4MXO\H`A_T5X8MXH68B'!:@AU0_F@)$8\J6/)'(0M0#[ OD/<=0%9A`Z H
M5K$/H " !;#<<RF8BAVAA:=B"($TD.^1D6$D>*$9H40>H"0R*$+_,-$U-CE2
M) 4MD!P2D,(K`O\Z4!B0>F9_,QWP&^$:@%J2^QZ""0!O+F :HB^1@*9Z9O\\
M:'N6>:]IQ*H?JR^L/ZU/OT#70,IZ*7L]0-=ZP%E_0K<8\@AP5S%TAI$:$&(V
M%O\>D79C&>%V\$9M>F9+<!]!_[,GG8(><"W!%>$N8$F "W!O`R"EHBD`&) M
M=F-"\#7P-S W37%]K_^H[T#UM[(/LQ^T)G<ZL2M!0)Q2_1EA<AB0M5BV'[<O
MN#^Y3Q>Z5A=$$?$`QL ```#`! 0``````,`$1 ``````P" $/____] ``<P
M0-?(D7TFP % ``@P0-?(D7TFP $+`" "" &``````# ````````1@`````#
MA0````````,``H (( 8``````, ```````!&`````!"%`````````P`%@ @@
M!@``````P ```````$8`````4H4``+<-```#``F "" &``````# ````````
M1@`````!A0```````!X`(H (( 8``````, ```````!&`````%2%```!````
M! ```#@N, `+`": "" &``````# ````````1@``````.A0````````,`)X (
M( 8``````, ```````!&`````!&%`````````P`I@ @@!@``````P ``````
M`$8`````&(4`````````>`#B "" &``````# ````````1@``````VA0```0``
M``$`````````'@`Y@ @@!@``````P ```````$8``````-X4```$````!````
M`````!X`.H (( 8``````, ```````!&`````#B%```!`````0`````````>
=`#T``0````4```!213H@``````,`#33]-P``]KN%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

87. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sun, 24 Sep 2000 18:02:52 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110892-2000.09.24-19.12.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Mark Phillips <g7ltt@g7ltt.com>
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

>
> Also, since enclosing the board into the box the display reads a constant
32
> deg and no wind. Could that just be a reset that's needed?
>

Mark,

I have my T-238s enclosed in 6"x4"x3" aluminum boxes and they work the same in the box as outside the box. Since your message yesterday, I have left the backlight on continuously in one of them. Nothing unusual so far. The box is not getting warm. I can't tell the temperature of the small heat sink which is in the air inside the box without opening the box. The unit is powered by a standard "wall-wart".

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

88. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 24 Sep 2000 20:16:52 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110894-2000.09.24-19.25.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I've just taken a trip to the roof in the dark and recovered the weather bit. I was working on the assumption that the thing just needed to have the wind direction thing rotated again.

Only sort of worked though. Now I have wind direction and speed which match up with my Davis but the temp is still at 32f. On the bench I saw it rise to 45 for a few moments. Could it be that the temp module has failed? I also tried pouring water into my uncalibrated rain bucket and the rain went up so I think that the T238 is ok.

As for the light/running hot problem. It has always run hot with the light on. The heat sink that came with the kit got so hot that I could melt solder onto it! I'm gonna live with it and put a fan in the box.

Mark

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 7:20 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> Mark:
>
> Now I'm even more confused. I assume it was working at one point, then
> along the way something happened to make the unit quit reporting good
data.
> Was it putting the thing in an enclosure? If you have not cycled power
> that is always a good thing to try and see if it clears things up.
Cycling
> power will also restart the software so it will do a bus check on power-up
> and tell you if it finds anything major wrong with the software. If it
> does it will flash up a message as described below. BTW, could it be
> reporting 31 degrees? That is a magic number, 32 isn't.
>
> will
>
> -----Original Message-----

> From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> Sent: Sunday, September 24, 2000 5:02 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> Nope, no difference if the heat sink is on or off. Its almost like there's
> a
> volts drop but I haven't tested that theory.
>
> Also, since enclosing the board into the box the display reads a constant
> 32
> deg and no wind. Could that just be a reset that's needed?
>
> Mark
>
>
> ----- Original Message -----
> From: "William Beals" <will@beals5.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, September 24, 2000 10:30 AM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > Mark:
> >
> > Just want to make sure that things were OK until you added the heat
sink.
> > If adding he heatsink is causing the problem, then Russ is right, it is
> > probably a grounding issue that is being created by attaching the
> heatsink
> > to the case. The tab of the heatsink is electrically connected to
> ground,
> > so that would imply that for some reason the case is not. When you
power
> > up the unit I do some santiy checking on the bus and report if the bus
is
> > either shorted to ground or completely open (no sensors) and report this
> > briefly to the LCD. Do you see any messages? If you do, that will give
> > you a hint where to look as well.
> >
> > will
> >
> >
>
>
> ---
> ----
> ----
>
>
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

89. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 24 Sep 2000 21:33:04 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110921-2000.09.24-20.41.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ok. I'm going mad. Now it reads 60f which is about right according to my
Davis.

What's going on?

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 8:16 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> I've just taken a trip to the roof in the dark and recovered the weather
> bit. I was working on the assumption that the thing just needed to have
the
> wind direction thing rotated again.
>
> Only sort of worked though. Now I have wind direction and speed which
match
> up with my Davis but the temp is still at 32f. On the bench I saw it rise
to
> 45 for a few moments. Could it be that the temp module has failed? I also
> tried pouring water into my uncalibrated rain bucket and the rain went up
so
> I think that the T238 is ok.
>
> As for the light/running hot problem. It has always run hot with the light
> on. The heat sink that came with the kit got so hot that I could melt
solder
> onto it! I'm gonna live with it and put a fan in the box.
>
> Mark
>
> ----- Original Message -----
> From: "William Beals" <will@beals5.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, September 24, 2000 7:20 PM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > Mark:
> >
> > Now I'm even more confused. I assume it was working at one point, then
> > along the way something happened to make the unit quit reporting good
> data.
> > Was it putting the thing in an enclosure? If you have not cycled power
> > that is always a good thing to try and see if it clears things up.
> Cycling
> > power will also restart the software so it will do a bus check on
power-up
> > and tell you if it finds anything major wrong with the software. If it
> > does it will flash up a message as described below. BTW, could it be
> > reporting 31 degrees? That is a magic number, 32 isn't.
> >
> > will
> >
> > -----Original Message-----
> > From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> > Sent: Sunday, September 24, 2000 5:02 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > Nope, no difference if the heat sink is on or off. Its almost like
there's
> > a

> > volts drop but I haven't tested that theory.
> >
> > Also, since enclosing the board into the box the display reads a
constant
> > 32
> > deg and no wind. Could that just be a reset that's needed?
> >
> > Mark
> >
> >
> > ----- Original Message -----
> > From: "William Beals" <will@beals5.com>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Sunday, September 24, 2000 10:30 AM
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > > Mark:
> > >
> > > Just want to make sure that things were OK until you added the heat
> sink.
> > > If adding he heatsink is causing the problem, then Russ is right, it
is
> > > probably a grounding issue that is being created by attaching the
> > heatsink
> > > to the case. The tab of the heatsink is electrically connected to
> > ground,
> > > so that would imply that for some reason the case is not. When you
> power
> > > up the unit I do some santiy checking on the bus and report if the bus
> is
> > > either shorted to ground or completely open (no sensors) and report
this
> > > briefly to the LCD. Do you see any messages? If you do, that will
give
> > > you a hint where to look as well.
> > >
> > > will
> > >
> > >
> >
> >
> > --
> > ----
> > ----
> >
> >
> > >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> --
--
> ----
>
>
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com

> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

90. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 24 Sep 2000 22:32:32 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110928-2000.09.24-21.41.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, it seems to be holding out with the right tempo now. Currently
reading 59 which concurs with the Davis and also with LGA airport about half
a mile away.

Maybe it was just 'one of those things!!

Mark

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 9:33 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> Ok. I'm going mad. Now it reads 60f which is about right according to my
> Davis.
>
> What's going on?
>
>
> ----- Original Message -----
> From: "Mark Phillips" <g7ltt@g7ltt.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, September 24, 2000 8:16 PM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > I've just taken a trip to the roof in the dark and recovered the weather
> > bit. I was working on the assumption that the thing just needed to have
> the
> > wind direction thing rotated again.
> >
> > Only sort of worked though. Now I have wind direction and speed which
> match
> > up with my Davis but the temp is still at 32f. On the bench I saw it
rise
> to
> > 45 for a few moments. Could it be that the temp module has failed? I
also
> > tried pouring water into my uncalibrated rain bucket and the rain went
up
> so
> > I think that the T238 is ok.
> >
> > As for the light/running hot problem. It has always run hot with the
light
> > on. The heat sink that came with the kit got so hot that I could melt
> solder
> > onto it! I'm gonna live with it and put a fan in the box.
> >
> > Mark
> >
> > ----- Original Message -----
> > From: "William Beals" <will@beals5.com>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Sunday, September 24, 2000 7:20 PM
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > > Mark:
> > >
> > > Now I'm even more confused. I assume it was working at one point,

then
> > > along the way something happened to make the unit quit reporting good
> > data.
> > > Was it putting the thing in an enclosure? If you have not cycled
power
> > > that is always a good thing to try and see if it clears things up.
> > Cycling
> > > power will also restart the software so it will do a bus check on
> power-up
> > > and tell you if it finds anything major wrong with the software. If
it
> > > does it will flash up a message as described below. BTW, could it be
> > > reporting 31 degrees? That is a magic number, 32 isn't.
> > >
> > > will
> > >
> > > -----Original Message-----
> > > From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> > > Sent: Sunday, September 24, 2000 5:02 PM
> > > To: TAPR WX Special Interest Group
> > > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> > >
> > >
> > > Nope, no difference if the heat sink is on or off. Its almost like
> there's
> > > a
> > > volts drop but I haven't tested that theory.
> > >
> > > Also, since enclosing the board into the box the display reads a
> constant
> > > 32
> > > deg and no wind. Could that just be a reset that's needed?
> > >
> > > Mark
> > >
> > >
> > > ----- Original Message -----
> > > From: "William Beals" <will@beals5.com>
> > > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > > Sent: Sunday, September 24, 2000 10:30 AM
> > > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> > >
> > >
> > > > Mark:
> > > >
> > > > Just want to make sure that things were OK until you added the heat
> > sink.
> > > > If adding he heatsink is causing the problem, then Russ is right,
it
> is
> > > > probably a grounding issue that is being created by attaching the
> > > heatsink
> > > > to the case. The tab of the heatsink is electrically connected to
> > > ground,
> > > > so that would imply that for some reason the case is not. When you
> > power
> > > > up the unit I do some santiy checking on the bus and report if the
bus
> > is
> > > > either shorted to ground or completely open (no sensors) and report
> this
> > > > briefly to the LCD. Do you see any messages? If you do, that will
> give
> > > > you a hint where to look as well.
> > > >
> > > > will
> > > >
> > > >
> > > >
> > > >
> > >
> > > ---
> > > > ----
> > > > ----
> > > >
> > > >
> > > >
> > > >
> > > > ---

> > > > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > > > To unsubscribe send a blank email to
leave-wxsig-15067P@lists.tapr.org
> > > >
> > > >
> > >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> >
>
> ---
> --
> > ----
> >
> >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

91. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Russ Chadwick" <crb5@uswest.net>
Date: Sun, 24 Sep 2000 20:02:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110931-2000.09.24-22.09.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark,

First, about the hot heatsink. Mine got hot, but nowhere near hot enough to
melt solder. Are any other components on the T-238 board getting hot? What
voltage are you driving it with?

Second, about the change in temperature reading. I understand that it is
inside, on the bench now. Are you using the DS1820 on the round circuit
board or a DS18S20 in an external enclosure as the active temperature
sensor? The T-238 will use either, but will only output the temperature of
whichever one you select at set-up. Make sure that, on the bench, when you
warm the selected one, the reading goes up accordingly. That's the only
test that I do to make sure that the temperature sensor is working. If the
sensor is out in the air, just blowing on it is sufficient to raise the
temperature reading.

Russ
kb0tvj

----- Original Message -----
From: Mark Phillips <g7ltt@g7ltt.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 7:33 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> Ok. I'm going mad. Now it reads 60f which is about right according to my
> Davis.
>
> What's going on?
>
>
> ----- Original Message -----
> From: "Mark Phillips" <g7ltt@g7ltt.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, September 24, 2000 8:16 PM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > I've just taken a trip to the roof in the dark and recovered the weather
> > bit. I was working on the assumption that the thing just needed to have
> the
> > wind direction thing rotated again.
> >
> > Only sort of worked though. Now I have wind direction and speed which
> match
> > up with my Davis but the temp is still at 32f. On the bench I saw it
rise
> to
> > 45 for a few moments. Could it be that the temp module has failed? I
also
> > tried pouring water into my uncalibrated rain bucket and the rain went
up
> so
> > I think that the T238 is ok.
> >
> > As for the light/running hot problem. It has always run hot with the
light
> > on. The heat sink that came with the kit got so hot that I could melt
> solder
> > onto it! I'm gonna live with it and put a fan in the box.
> >
> > Mark
> >

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

92. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sun, 24 Sep 2000 23:08:02 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110933-2000.09.24-22.16.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm driving the T238 with 13.8v from my shack supply and nothing else is
getting hot. I did at first think that something was pulling extra current
on the 5v side but its only when the light is on so its a pretty good bet
that the light is pulling the current.

The 1-wire bit is back outside now and appears to be working suddenly. Dunno
what made it change its mind and start working again. I have the DS1994 to
install when the IButton clip holder arrives in the mail. I wanted to get
the Hygrometer going but couldn't find the right IButton for that.

Looks like its all going ok now save for the heat problem. Next step APRS
and www-weather.

Mark

----- Original Message -----
From: "Russ Chadwick" <crb5@uswest.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 10:02 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> Mark,
>
> First, about the hot heatsink. Mine got hot, but nowhere near hot enough
to

> melt solder. Are any other components on the T-238 board getting hot?
What
> voltage are you driving it with?
>
> Second, about the change in temperature reading. I understand that it is
> inside, on the bench now. Are you using the DS1820 on the round circuit
> board or a DS18S20 in an external enclosure as the active temperature
> sensor? The T-238 will use either, but will only output the temperature
of
> whichever one you select at set-up. Make sure that, on the bench, when
you
> warm the selected one, the reading goes up accordingly. That's the only
> test that I do to make sure that the temperature sensor is working. If
the
> sensor is out in the air, just blowing on it is sufficient to raise the
> temperature reading.
>
> Russ
> kb0tvj
>
> ----- Original Message -----
> From: Mark Phillips <g7ltt@g7ltt.com>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Sent: Sunday, September 24, 2000 7:33 PM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > Ok. I'm going mad. Now it reads 60f which is about right according to my
> > Davis.
> >
> > What's going on?
> >
> >
> > ----- Original Message -----
> > From: "Mark Phillips" <g7ltt@g7ltt.com>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Sunday, September 24, 2000 8:16 PM
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > > I've just taken a trip to the roof in the dark and recovered the
> weather
> > > bit. I was working on the assumption that the thing just needed to
> have
> > the
> > > wind direction thing rotated again.
> > >
> > > Only sort of worked though. Now I have wind direction and speed which
> > match
> > > up with my Davis but the temp is still at 32f. On the bench I saw it
> > rise
> > to
> > > 45 for a few moments. Could it be that the temp module has failed? I
> also
> > > tried pouring water into my uncalibrated rain bucket and the rain went
> up
> > so
> > > I think that the T238 is ok.
> > >
> > > As for the light/running hot problem. It has always run hot with the
> light
> > > on. The heat sink that came with the kit got so hot that I could melt
> > solder
> > > onto it! I'm gonna live with it and put a fan in the box.
> > >
> > > Mark
> > >
>
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

93. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Mon, 25 Sep 2000 06:48:18 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110975-2000.09.25-05.56.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, I give up. This morning its back to 32f again. Does it sound like a
faulty temp device?

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, September 24, 2000 11:08 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> I'm driving the T238 with 13.8v from my shack supply and nothing else is
> getting hot. I did at first think that something was pulling extra current
> on the 5v side but its only when the light is on so its a pretty good bet
> that the light is pulling the current.
>
> The 1-wire bit is back outside now and appears to be working suddenly.
Dunno
> what made it change its mind and start working again. I have the DS1994 to
> install when the IButton clip holder arrives in the mail. I wanted to get
> the Hygrometer going but couldn't find the right IButton for that.
>
> Looks like its all going ok now save for the heat problem. Next step APRS
> and www-weather.
>
> Mark
>
> ----- Original Message -----
> From: "Russ Chadwick" <crb5@uswest.net>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Sunday, September 24, 2000 10:02 PM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > Mark,
> >
> > First, about the hot heatsink. Mine got hot, but nowhere near hot
enough
> to
> > melt solder. Are any other components on the T-238 board getting hot?
> What
> > voltage are you driving it with?
> >
> > Second, about the change in temperature reading. I understand that it
is
> > inside, on the bench now. Are you using the DS1820 on the round circuit
> > board or a DS18S20 in an external enclosure as the active temperature
> > sensor? The T-238 will use either, but will only output the temperature
> of
> > whichever one you select at set-up. Make sure that, on the bench, when
> you
> > warm the selected one, the reading goes up accordingly. That's the only
> > test that I do to make sure that the temperature sensor is working. If
> the
> > sensor is out in the air, just blowing on it is sufficient to raise the
> > temperature reading.
> >
> > Russ
> > kb0tvj
> >
> > ----- Original Message -----
> > From: Mark Phillips <g7ltt@g7ltt.com>
> > To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> > Sent: Sunday, September 24, 2000 7:33 PM
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > > Ok. I'm going mad. Now it reads 60f which is about right according to
> my
> > > Davis.

> > >
> > > What's going on?
> > >
> > >
> > > ----- Original Message -----
> > > From: "Mark Phillips" <g7ltt@g7ltt.com>
> > > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > > Sent: Sunday, September 24, 2000 8:16 PM
> > > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> > > >
> > > >
> > > > > I've just taken a trip to the roof in the dark and recovered the
> weather
> > > > > bit. I was working on the assumption that the thing just needed to
> have
> > > > the
> > > > > wind direction thing rotated again.
> > > > >
> > > > > Only sort of worked though. Now I have wind direction and speed
which
> > > match
> > > > > up with my Davis but the temp is still at 32f. On the bench I saw it
> > rise
> > > > to
> > > > > 45 for a few moments. Could it be that the temp module has failed? I
> > also
> > > > > tried pouring water into my uncalibrated rain bucket and the rain
went
> > up
> > > > so
> > > > > I think that the T238 is ok.
> > > > >
> > > > > As for the light/running hot problem. It has always run hot with the
> > light
> > > > > on. The heat sink that came with the kit got so hot that I could
melt
> > > solder
> > > > > onto it! I'm gonna live with it and put a fan in the box.
> > > > >
> > > > > Mark
> > > > >
> >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

94. [wxsig] Re: KPC3 set-up

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Mon, 25 Sep 2000 06:29:30 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110976-2000.09.25-06.38.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hey no problem...I've been building projects for 25 years from QST, 73,
Pop. Elec, Radio Elec. I've seen schematic problems that "let the smoke
out" This was an easy fix + I should have known there must be at least a
gnd on the chip. One nice thing about home brew building now is that the
data sheets are on the web and folks can share hints like we do here.
Thanks again...
Bill N5ZTW
P.S. I got it up and running in the peet mode. I tried TNC dir with a
KPC3+ running V8.2 (no second port) It seems to also want a LF at the
end of the string.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

95. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 25 Sep 2000 06:09:46 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-110977-2000.09.25-07.17.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Mark Phillips <g7ltt@g7ltt.com>
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> OK, I give up. This morning its back to 32f again. Does it sound like a
> faulty temp device?

Mark,

The best way to determine if a given 1-Wire sensor is faulty is to put the unit on the bench and use both the T-238 and the Dallas Semiconductor software to see if the response to a physical input (spinning anemometer, heat, etc) is appropriate. If there is a question, I run them on the bench for several nights and make sure that everything is consistent. I don't like to change out a sensor unless I know for sure that it's faulty.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

96. [wxsig] Re: Davis Weather Wizard II for sale

From: "Bob" <rg_davis@email.msn.com>
Date: Mon, 25 Sep 2000 07:56:36 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111015-2000.09.25-09.05.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like the specs on this item.

bob/kd7cm

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, September 23, 2000 6:15 PM
Subject: [wxsig] Davis Weather Wizard II for sale

> I'm making a brave assumption that its ok to do this here.
>
> I have a Davis Weather Wizzard II with the Rain Bucket and PC addons. Only
> been up for the summer. Suitable for APRS use with PC etc. I'm looking for
> $180 + shipping. Can do cheque in mail or PayPal.
>
> Mark Phillips, G7LTT/KC2ENI
> New York, NY - 11103
> 40' 45.781N 073' 54.472W
> http://www.g7ltt.com
>
>
>
> ---
> You are currently subscribed to wxsig as: rg_davis@email.msn.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

97. [wxsig] Re: KPC3 set-up

From: Michael Barelli "W□MAF" <barelmic@yahoo.com>
Date: Mon, 25 Sep 2000 07:19:41 -0700 (PDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111030-2000.09.25-09.28.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Great job on the Home Brew. Did not know about the Ground. It looks like there will be a fix soon for the LF problem in the Kantronics modes. Looking forward to seeing your data on findu.com. Mine is w0maf-1. One thing I would like is to change the icon that is sent by the _ character by defalt. Does any one know how to change this? I have looked at the APRS help and there seems to be three ways to do this but the data itself seems to over writing the icon data. Does anyone really know whats going on here?

73

Bill Ellis <rwsw60@email.sps.mot.com> wrote:

Hey no problem...I've been building projects for 25 years from QST, 73, Pop. Elec, Radio Elec. I've seen schematic problems that "let the smoke out" This was an easy fix + I should have known there must be at least a gnd on the chip. One nice thing about home brew building now is that the data sheets are on the web and folks can share hints like we do here.
Thanks again...
Bill N5ZTW
P.S. I got it up and running in the peet mode. I tried TNC dir with a KPC3+ running V8.2 (no second port) It seems to also want a LF at the end of the string.

You are currently subscribed to wxsig as: w0maf@arrl.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Michael Barelli W□MAF

Do You Yahoo!?
Send instant messages & get email alerts with Yahoo! Messenger.

98. [wxsig] Re: Davis Weather Wizard II for sale

From: Mark Phillips <Mark.Phillips@royalblue.com>
Date: Mon, 25 Sep 2000 10:36:04 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111034-2000.09.25-09.42.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry Bob,

Sold it.

-----Original Message-----
From: bounce-wxsig-19302@lists.tapr.org
[mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Bob
Sent: Monday, September 25, 2000 9:57 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Davis Weather Wizard II for sale

I would like the specs on this item.

bob/kd7cm

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, September 23, 2000 6:15 PM
Subject: [wxsig] Davis Weather Wizard II for sale

> I'm making a brave assumption that its ok to do this here.
>
> I have a Davis Weather Wizzard II with the Rain Bucket and PC addons. Only

> been up for the summer. Suitable for APRS use with PC etc. I'm looking for
> $180 + shipping. Can do cheque in mail or PayPal.
>
> Mark Phillips, G7LTT/KC2ENI
> New York, NY - 11103
> 40' 45.781N 073' 54.472W
> http://www.g7ltt.com
>
>
>
> ---
> You are currently subscribed to wxsig as: rg_davis@email.msn.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: g7ltt@g7ltt.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

****
This message is intended only for the stated addressee(s) and may
be confidential. Access to this email by anyone else is unauthorised.
Any opinions expressed in this email do not necessarily reflect the
opinions of royalblue. Any unauthorised disclosure, use or
dissemination, either whole or in part is prohibited. If you are
not the intended recipient of this message, please notify the sender
immediately.
****

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

99. [wxsig] Re: KPC3 set-up

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Mon, 25 Sep 2000 10:48:22 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111049-2000.09.25-10.56.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm online now Michael check out N5ZTW on Findu.com. The good wx data
started from about 3am this morning.I was up all night working on it!
The KPC3 abaud does not change until you do a reset command or cycle the
power. This had me chasing my tail for a while when testing the
different T-238 data modes. Thanks for your help..
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

100. [wxsig] AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

From: jstevens@hns.com
Date: Mon, 25 Sep 2000 13:48:53 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111089-2000.09.25-15.58.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will the code modifications to insert the required "LF" character for KPC3+
operation be available in the next release? If not, can I get a copy of the
modified code (compiled) to load in my T238?

I ams currently using the KPC3+ RS-232 serial port to interface the T238, but I
would like to use the GPS port option on the radio port, so that I can reconnect
the RS-232 serial port to my APRS/SA PC.

John Stevens
K9AZZ

>Subject: RE: Problems with T238 and KPC3+ v 8.3 GPS port
>From: John Vause <jdv@iglou.com>
>Date: Fri, 01 Sep 2000 11:54:07 -0400
>X-Message-Number: 1
>

>That was it! It's working now.
>I appended a "LF" to the TNC-LTP message format and
>recompiled. Now the KPC3+ is accepting the T238 data on the GPS port.
>
>Thanks.
>
>73
>
>William Beals wrote:
>
> John:
>
> It appears that the LTP mode is unique in that it requires a CR-LF to
> terminate the string correctly instead of the more normal CR-only. I made
> a special cut for someone to test this theory and it seems to have fixed
> the problem. I'll release this change in the next cut.
>
> will
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

101. [wxsig] Re: QC Wx Program

From: Gerry Creager <gerry@cs.tamu.edu>
Date: Mon, 25 Sep 2000 17:07:28 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111098-2000.09.25-17.15.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ Chadwick wrote:
>
> ----- Original Message -----
> From: Rich Beckwith <wn0x@earthlink.net>
> Subject: [wxsig] QC Wx Program
>
> > Russ, I guess there is some confusion over "decimal degrees". I have
> > verified my numbers and they are accurate for 38 degrees 37 minutes and
> .77
> > decimal seconds north by 92 degrees 20 minutes and .6502 decimal seconds
> > West.
> >
> > I reported 38.6295, -92.34417 but for some reason I still show up in
> > northwest Missouri. Are you sure the don't need decimal seconds, which
> > would be expressed as 3837.77N, 9220.65W?
>
> Rich,
>
> The QCMS people were quite specific that they need decimal degrees. For
> your latitude of 38 degrees, 37 minutes, 0.77 seconds, wouldn't the decimal
> degrees be
>
> 38 + (37 + 0.77/60) / 60   = + 38.61688 degrees (north latitude)
>
> I think that the longitude of 92 degrees, 20 min, 0.65 seconds would be
>
> 92 + (20 + 0.65/60) / 60   =   - 92.33351 degrees (west longitude)
>
> I don't have a book with the equations here at home and am making a stab at
> them. My memory could be bad, but these look right. Note that 38 deg, 59
> min, 60 sec would be
>
> 38 + (59 + 60/60) / 60   =   39.00000 degrees

Your stab is right on, Russ. If the original DMS coordinates are
correct, Russ' values are equivalent.

38.6295   38 deg.   37 min.   46.2 sec NORTH
-92.34417   92 deg.   20 min.   39.012 sec WEST
--
Gerry Creager | Never ascribe to Malice that
AATLT | which can adequately be
Texas A&M University | explained by Stupidity.
979.458.4020 (Phone) | -- Lazarus Long
979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

102. [wxsig] Re: KPC3 set-up

From: John Koster <w9ddd@tapr.org>
Date: Mon, 25 Sep 2000 19:35:33 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111203-2000.09.25-19.43.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry this one bit you. It was common with some CAD programs to 'hide'
the ground and +5 connections and bus them internally so to
speak. Probably not too confusing with things like 74xx logic. When I
created the library part for the MAX 232 I think I started with a 74xx
symbol of some kind and didn't think I would create a problem, but it has
raised questions a number of times. I think I have fixed that in my
library, but I need to check and be sure.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Sat, 23 Sep 2000, William Delbert Ellis wrote:

> Ok a quick search of the WEB tells me pin 16 is +5v and pin 15 is gnd! I'm sure
> this is the problem as I did not wire these. (per schematic) I'm going to go
> wire it now and check it out. I never thought it would be this easy to fix.
> This has been a great project and y'all did a fine job. I have not built a
> project in a long time that I have enjoyed so much...
> Bill N5ZTW
>
> William Beals wrote:
>
> > Bill:
> >
> > If neither the TNC nor the computer are getting the right data, then it is
> > likely that it is not coming out of your board correctly. The firmware
> > should be sending nothing but printable ASCII plus linefee/carraige return
> > stuff. If you can get near a silly-scope to see if the data is the right
> > voltage and timing that would be great, but I assume you are not so luckily
> > equipped. Since you are getting some data it could be something like bad
> > volrages from the MAX chip. Check the MAX232 voltages on pins 2 and 6.
> > They should be about +9V and -9V respectively. If not, something weird is
> > going on there.
> >
> > Upside down question marks are pretty weird. I wonder if that is how
> > hyperterminal says you got a "bad" chracter--especially if you are getting
> > the right number of characters. If so, the only real kind you can get
> > would be things like framing errors or parity errors. The format for
> > TNC-DIR mode should be 4800 baud, 8 data bits, no parity, and one stop bit.
> >
> > Hope that helps, please let us know.
> >
> > will
> >
> > -----Original Message-----
> > From: Michael Barelli "WOMAF [SMTP:barelmic@yahoo.com]
> > Sent: Friday, September 22, 2000 8:27 AM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Re: KPC3 set-up
> >
> > Looks more complicated than I thought. Try using the Peet mode with 2400
> > bd and using !! for Gpshead. This will send data at once every 5 seconds.
> > You will not get averaged data but this will work. Try looking at the
> > data with the terminal mode in Winaprs.
> >
> > Good luck!
> >
> >   Bill Ellis <rwsw60@email.sps.mot.com> wrote:
> > Michael, Thank You for the reply, I tried the @ and still no go. It
> > seems the KPC3+ (v8.2)and the T-238 are not talking. I started looking
> > at the data from the T-238 on Windows 3.1 terminal program. I get a
> > string every five minutes with the correct numbers of places but strange
> > ASCII. I see a lot of lower case y and w and upside down question marks,
> > weird stuff! I've tried all terminal combos 7, bit 8 bit, parity, bla

> > bla, it seems the baud rate is ok because if I change it the strings get
> > short or not at all. I have tried all formats peet, TNC dir, TNC ltp,
> > computer dir. Do you know if the T-238 converts the wx data to some kind
> > of MicE format or does it look like my board has got a problem? Keep in
> > mind it is a home brew not a TAPR kit. I also replaced the Max 232 chip
> > with the same results. I guess I need to triple check the wiring in this
> > area. I think board wiring is most likely the issue.
> > Bill N5ZTW
> >
> > ---
> > You are currently subscribed to wxsig as: w0maf@arrl.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> > Michael Barelli WOMAF
> >
> > ---------------------------------
> > Do You Yahoo!?
> > Send instant messages & get email alerts with Yahoo! Messenger. << File:
> > ATT00001.html >>
> >
> >   Name: WINMAIL.DAT
> >   WINMAIL.DAT   Type: unspecified type (application/octet-stream)
> >   Encoding: x-uuencode
> >
> > ---
> > You are currently subscribed to wxsig as: n5ztw@texas.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

103. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Mon, 25 Sep 2000 21:02:33 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111227-2000.09.25-20.11.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, so I had the Dallas PC interface hooked up instead of the T238 and when
the T238 says the temp is 32f I swapped it over to the Dallas gizmo and it
read 55f which is what it should be. Back and forth I tried it and every
time the PC was correct.

I have left is on the PC all day with that Finish software and according to
the log files its read correct all day. I think I can say that the 1-wire
thing is ok.

Could it be that I need to re-flash my prom? If I did that would I have to
go back to the roof and redo the wind direction again?

Mark G7LTT

----- Original Message -----
From: "Russ Chadwick" <crb5@uswest.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, September 25, 2000 8:09 AM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> ----- Original Message -----
> From: Mark Phillips <g7ltt@g7ltt.com>
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > OK, I give up. This morning its back to 32f again. Does it sound like a
> > faulty temp device?
>
> Mark,
>
> The best way to determine if a given 1-Wire sensor is faulty is to put the

> unit on the bench and use both the T-238 and the Dallas Semiconductor
> software to see if the response to a physical input (spinning anemometer,
> heat, etc) is appropriate. If there is a question, I run them on the
bench
> for several nights and make sure that everything is consistent. I don't
> like to change out a sensor unless I know for sure that it's faulty.
>
> Russ
> kb0tvj
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

104. [wxsig] Re: QC Wx Program

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 25 Sep 2000 20:11:12 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111228-2000.09.25-20.16.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Guys, I'm confused.

Gerry, you gave the same figures I sent to Russ in the first place "38.6295
38 deg. 37 min. 46.2 sec NORTH and -92.34417 92 deg. 20 min. 39.012 sec
WEST".

Russ, if your calculations show 38.61688 North and -92.33351 West as correct
lets try them and see. I can tell you without a doubt that the stuff I
report to Findu and MapBlast is on the money, so I am sure it is a
conversion thing I'm just not getting through my thick head.

More "brain fade"

Rich - Wn0x

>> > Russ, I guess there is some confusion over "decimal degrees". I have
>> > verified my numbers and they are accurate for 38 degrees 37 minutes and
>> .77
>> > decimal seconds north by 92 degrees 20 minutes and .6502 decimal
seconds
>> > West.
>> >
>> > I reported 38.6295, -92.34417 but for some reason I still show up in
>> > northwest Missouri. Are you sure the don't need decimal seconds, which
>> > would be expressed as 3837.77N, 9220.65W?
>>
>> Rich,
>>
>> The QCMS people were quite specific that they need decimal degrees. For
>> your latitude of 38 degrees, 37 minutes, 0.77 seconds, wouldn't the
decimal
>> degrees be
>>
>> 38 + (37 + 0.77/60) / 60   = + 38.61688 degrees (north latitude)
>>
>> I think that the longitude of 92 degrees, 20 min, 0.65 seconds would be
>>
>> 92 + (20 + 0.65/60) / 60   =   - 92.33351 degrees (west longitude)
>>
>> I don't have a book with the equations here at home and am making a stab
at
>> them. My memory could be bad, but these look right. Note that 38 deg,
59
>> min, 60 sec would be
>>
>> 38 + (59 + 60/60) / 60   =   39.00000 degrees
>
>Your stab is right on, Russ. If the original DMS coordinates are
>correct, Russ' values are equivalent.

>
>38.6295 38 deg. 37 min. 46.2 sec NORTH
>-92.34417 92 deg. 20 min. 39.012 sec WEST
>--
>Gerry Creager | Never ascribe to Malice that
>AATLT | which can adequately be
>Texas A&M University | explained by Stupidity.
>979.458.4020 (Phone) | -- Lazarus Long
>979.847.8578 (Fax)
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

105. [wxsig] Intermittent Transmitting

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 25 Sep 2000 20:49:29 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111232-2000.09.25-20.54.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

When exactly does the text get sent to the TNC? Is it right at the end of
the 59th count?

I am still having intermittent trouble with sending data. I thought the
problem was that I wasn't making the nearest I-gate, but after watching my
TNC it appears that nothing is happening at the 59/1 count. I hooked the
TNC to my computer and checked to see if it was still in conversation mode
and it was. I typed in text, hit enter and it sent the data.

If I had a better idea of the timing involved I would know exactly when to
check. Do you recommend a way to monitor the output to see if it is sending
something?   The only thing unusual I see about my installation is that I do
have high error counts. I am still displaying all the data on the T238
however. Is there a chance that the errors prevent the transmission?

Thanks,

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

106. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: William Beals <will@beals5.com>
Date: Mon, 25 Sep 2000 20:11:35 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111237-2000.09.25-21.15.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

Reprogramming the flash likely won't fix the problem as corrupted code
would more likely crash the processor than just give you bad data. It is
fairly easy to do though and the good news is that as long as you use the
MON08 software you will not lose any of your sensor settings.

If you bad reading was 31 degrees F I would have a lot better explanation
as to your problem as that is usually a sign that the sensor ID got
mis-programmed somehow. I suspect it is something like a device that is
dragging down the bus and not allowing good communications or the sensor is
not getting enough power during the conversion process. If you can
re-check pins 23, 24, and 25 of the processor connections that would be a
good start. The other thing to do is measure the 1-wire bus voltage with a
voltmeter. If it is mostly above 4.8V and then occasionally dips to
something lower that is a good sign. If it does not, then there is a bad
element on the bus..

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Monday, September 25, 2000 7:03 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

OK, so I had the Dallas PC interface hooked up instead of the T238 and when the T238 says the temp is 32f I swapped it over to the Dallas gizmo and it read 55f which is what it should be. Back and forth I tried it and every time the PC was correct.

I have left is on the PC all day with that Finish software and according to the log files its read correct all day. I think I can say that the 1-wire thing is ok.

Could it be that I need to re-flash my prom? If I did that would I have to go back to the roof and redo the wind direction again?

Mark G7LTT

----- Original Message -----
From: "Russ Chadwick" <crb5@uswest.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, September 25, 2000 8:09 AM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> ----- Original Message -----
> From: Mark Phillips <g7ltt@g7ltt.com>
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > OK, I give up. This morning its back to 32f again. Does it sound like a
> > faulty temp device?
>
> Mark,
>
> The best way to determine if a given 1-Wire sensor is faulty is to put the
> unit on the bench and use both the T-238 and the Dallas Semiconductor
> software to see if the response to a physical input (spinning anemometer,
> heat, etc) is appropriate. If there is a question, I run them on the bench
> for several nights and make sure that everything is consistent. I don't
> like to change out a sensor unless I know for sure that it's faulty.
>
> Russ
> kb0tvj
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(@8"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`Z````4D4Z(%MW>'-I
M9UT@4F4Z(%0R,S@@<G5N;FEN9TA/5"!W:71H('1H92!,0T0@8F%C:VQI9VAT
```

```
M(&]N`/\2`06 `P`.````T <)`!D`% `+`",``0`\`0$@@ ,`#@```- '"0`9
M`!0`!@`=``$`,0$!"8 !`"$````R,$8R.#)#-S$Y.3-$-#$Q03@U-C P,#!%
M.#E",T,P.0#I!@$#D 8`6 L``"$````+``(``0````L`(P```````P`F````
M```+`"D```````,`+@```````P`V``````! `#D`(&CI&%\GP $>`' ``0``
M`#H```!213H@6W=X<VEG72!293H@5#(S."!R=6YN:6YG2$]4('=I=&@@=&AE
M($Q#1"!B86-K;&EG:'0@;VX````"`7$``0```!8````!P"=?&.''@O(ADQD1
MU*A6``#HFSP)```>`!X,`0````4```!33510`````!X`'PP!````$ ```'=I
M;&Q 8F5A;',U+F-O;0`#``80'_)X6 ,`!Q C"0``'@`($ $```!E````34%2
M2SI215!23T=204U-24Y'5$A%1DQ!4TA,24M%3%E73TY41DE85$A%4%)/0DQ%
M34%30T]24E505$5$0T]$15=/54Q$34]214Q)2T5,64-205-(5$A%4%)/0T53
M4T]25$A!3@`````"`0D0`0```!\(```;" ``.PX``$Q:1G4*C.HM/P`*`0,!
M]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U
M2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@P&YG,3 S,PNF!= Y"L!K.@JB
M"H0*@%)E11$P;PG 86UM"X!G0"!T:&4@9@M@<P!H(&QI:V5L>10@=P(@)P5
M9FEX1QC3&"$"8&5M(!E (/D%H7)U!3 )@!MQ`0`9X?QU;!P`!& )<!EV!0`9
M0G4:E6,'D',%L1C@`Y%J1'5S!4!G:789``F1"& @8F$<`&1A`9#P+B @205
M! `9$ MPFG(9P6490!G0=&\@,/<AX!C@"&!G&6 `<!P`&.+D9V\$<"!N!] $
M("#A_Q[1!4 ;40D`&+$;41_"'S #&0`8XDU/3C X(+L>D & =PK 'Z0#\&P#
M(/QN;P5 "0`E00!P&= F(+\?L@7 #Z `@ 6Q#Z%T&*'T<RX72DDH$Q_S"7 @
M$*<8HB90!" S,2 P90G"O00@1B"@'&4/<!^1821A705 8BD!!) A<'@+46[]
M(%!I`B ;0B'1*#,:V2/S>R#A'S!U!T 9P2U0`)!GSP.@(_,8XBB%240C$05
M^1B0<RT8)AOQ'I '@") [G<@@B8``S!P!9 @P2##_S02&. 8HAF"+4$!`!1P
M'F!U,#=D&&!G'W 8L2(`=_LQDAD`8A\P(I,G,C#Q-&"O&*(C(P6@&(!U`P!C
M+H/?!" >HS(G(.$G,F<I!"%PVR<P(F)P-& M\60(<1BU_06@;A^0#Y NHAXU
M(((J5+<ZX .@"7 M#V %D&L:P*,+@ 0@,C,L08 T0;#_(J(3\"?R'?P^L2-P
M-2 [$W\C\QQT+; M02,C'T *P'3](%4&/$G0!CP'K(8HR'CGR#A!X 90 AP
M)50Q+0/P^QSQ.-)V!O !D#RP)M$8X/\M04DB-=$$D#_4-50$8!] AS$2!N ?
MD30N.%8BEK\#H!Y0.N _$C#S*R!P+O/_-;D]LS!&138Q<4JG(@``D?\G,4&P
M3,-&<AD`3[,@`AFPWQL@"? %0"ZQ.)4N*7LFXN<72@KT&8 S-@% %: !0 \8
M(1O@-2 0=#$V("W]6 )/!1 W\0= != ><4EA/U@#%T97%%;A"Q-7%FDM&#$T
M- % &8 Q.##W`4 ,T%NC8BQ0`V$7, R2<F(6U"!0-@`G`$WR6X!33510.F<W
M24#4=$!?`RXZ<5T715S0WP9@`C!=. (@($!Y0; &8'\;T0;0+?$3\$&Q7# /
MT#>6.A8P7@!-8 =4;UTW@%1!4%(@5U@&`+\U`0<Q(* ",%(Q'T%'`V!C&\!@
M"'5B:C4173=;E'=X,6%=!_!E.D80'T&0)? ;L$.P&*%(3U3S2908XDQ#,L @
M`$$0&8#_(G!38EFO6KI69 NV%U,*X_D*@$]+0; >D"QQ#W BQ.9$,/$;45!#
M(-!ETB$0^S<!(D!O&: <`!O <)$?0.\K`4)V:/,BHG=,T1=$<I=]61!Y(](E
M41L@<<$KD3+W*! TL290<#4`' `U44OQ[QZQ(A)OYQ]P>@1@(I,U4/L71"KR
M(!0`*!!S8#;P&6!_(.%S8#!B!4 94$2U((!"OVK1(I,"$ `@&6 L@'0(@>]V
M8R*B-M $D'ESI0=Q&-/_<'$K<AN"-1$I?"ST&Q !@/\@TE.%<'$P\2 Q&=%J
M!"01_D8+@ 0`&6 F%R*B`- %H?\K(R'0<Z@)`!C &E ;$".A_G0$('D#?N6!
MIB" ?$$V`?]!("R 0')TD3&H2'1SIABB_8#B:RE["%$<H35110$C\[\L@"-P
M&_$AT4"Q&21M&=#Y&"%M/S_R+( K("+"1'?_@"6$MB,@:K-V]@-@* $BHG\)
M<7<4.=$@(4BA0^,;0&<-"W$_%TI=PT<W3%3V5!=*6 ,@6%Y7]!=$7//8(")2
M'S $($-O@0/P$4$0(B \!0!B-4"7'S ]P!] +B-P=#X71+]D$9B09,]EVYF!
M:$- &8"O'T I8 &0$3 N!;!GFJ778)-A7V)I.&,@.0_@8W6_9S9H+VD_:D]K
M61=H/E?TWY9_EXJG`)A$7<P\7PV:I?^G`*(/HQ^D+Z4_JZ:FIJ<`_V[R+( ?
M<QO ((!&($LS!*"_BD.&(9#6=:*3HR" 1%$R?WIR"& BL394L/@A$!R0=+\A
ML74R-L23]:NG%O(LL(W_1B(ML!]!)E AM$IB&)%24>^1P1]C`Z!(<%=(HCO8
MMJ7S(\(AX'!U,>.FICJQ4V@_"?!YP2*B)3(&X*ZE5"W_<N9OR09@&) ^L3X`
M-2 %L/^FIB873C()X+N2D5,'D#V@YP" Q&,M4'!H=+ ZT0,@^PN OC(H-/ +
M@+,#`' ;('\UP@20N08L\"& 49$/L&/^*4^C=C #8!$P!S ;X#_4_5(9<0I0
M'T NH;&RK=$8TO\;,%.$%T2_XZ:F>^$H<3[A_UBQ`P!K(3CT`, V<4?E)!'_
M?3.*)SZQ`)!R`0(P-(,B`/\:$::F-E,AT0]A%@!&0;Y!OS%!*)0ZL(71!" L
M@&LG,.\'X,Z#T%<U4">]1BEUJZ>+F+*FIFM=D'1V:K ?VZ;6IJ99']$F8F,(
M< EP]P(P&<$PT&($\BVPC0.LT_\;0:U@7PVYAR'@.K#=!RAR_X/Q'_ 5X4$@
M&R +< ,@(=$?&Q M$4B K.);D#4W,/PW39W-V=^F'5EWV^_<_\W>!G=B,0=
M<T Z<;XP_0^@<A^0WSC?_^$/XA_C+Q?D-A=$$?$`\* ``P`0$ `````#`!$0
M``````,`@!#_____0 ``, !X96)>)\ !0 `(, !X96)>)\ !"P``@ @@!@``
M````P `````````$8``````X4`````````#``* "" &``````# `````````1@``
M```0A0`````````,`!8 (( 8``````, ```````!&`````%*%``"W#0```P`)
M@ @@!@``````P `````````$8``````84`````````>`"* "" &``````# ````
M````1@````!4A0```0````0````X+C `"P`F@ @@!@``````P `````````$8`
M````#H4`````````#`"> "" &``````# `````````1@`````1A0`````````,`
M*8 (( 8``````, ```````!&`````!B%`````````'@`X@ @@!@``````P ``
M``````$8``````-H4```$````!`````````!X`.8 (( 8``````, ```````!&
M``````#>%```!`````0`````````>`#J "" &``````# `````````1@`````X
MA0```0````$`````````'@`]``$````%````4D4Z( `````#``TT_3<``&Y=
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

107. [wxsig] RE: AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

From: William Beals <will@beals5.com>
Date: Mon, 25 Sep 2000 19:50:32 -0600

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111236-2000.09.25-21.15.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

I thought I had released that code, but looking back at my release notes it
was just a test cut. The test cut only adds the LF to the APRS mode, not
the Peet mode, but I am pretty sure that is OK. I am pretty swamped this
week, so I will post the test cut on the website to get any interested
parties going. It is labled 1.10.1S.

will

-----Original Message-----
From: jstevens@hns.com [SMTP:jstevens@hns.com]
Sent: Monday, September 25, 2000 2:49 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

Will the code modifications to insert the required "LF" character for KPC3+
operation be available in the next release? If not, can I get a copy of the
modified code (compiled) to load in my T238?

I ams currently using the KPC3+ RS-232 serial port to interface the T238,
but I
would like to use the GPS port option on the radio port, so that I can
reconnect
the RS-232 serial port to my APRS/SA PC.

John Stevens
K9AZZ

>Subject: RE: Problems with T238 and KPC3+ v 8.3 GPS port
>From: John Vause <jdv@iglou.com>
>Date: Fri, 01 Sep 2000 11:54:07 -0400
>X-Message-Number: 1
>
>That was it! It's working now.
>I appended a "LF" to the TNC-LTP message format and
>recompiled. Now the KPC3+ is accepting the T238 data on the GPS port.
>
>Thanks.
>
>73
>
>William Beals wrote:
>
> John:
>
> It appears that the LTP mode is unique in that it requires a CR-LF to
> terminate the string correctly instead of the more normal CR-only. I
made
> a special cut for someone to test this theory and it seems to have fixed
> the problem. I'll release this change in the next cut.
>
> will
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 Wx08.s19
M4S$Q,T9&1$,X,# P.# P-#@P,#@X,#!#.# Q,#@P,30X,#$X.# Q0T$Q#0I3
M,3$S1D9%0S@P,C X,#(T.# R.#@P,D,X,#,P.# S-#@P,S@X,#-#.3$-"E,Q
M,#=&1D9#.# T,$8P,# T1 T*4S$Q,T8P,#!#0T8P,#E#0T8Q0D5#0T8Q0T%#
M1$8P,3=#1$8P-$1#1#A!#0I3,3$S1C Q,$8Q-T%#1$8P.# R,#,R,T8P,#9%
M,#<P-#-&,#$V13@P,$,-"E,Q,3-&,#(P,#4V13 V,#(S1C V,T8P,S9%1D8P
M-S$P,49"-C Q031$0PT*4S$Q,T8P,S W.$$Q-C R-C$T038T,$(W,3-!-C!#
M0C<Q-$$V,#!"-SA&#0I3,3$S1C T,#$U038S,D(W,3E#1$8R03DX,3E#0T,X
M,#0T-#5&,#<V,T8-"E,Q,3-&,#4P0T1&,$8T0T1&,3)#,C1&-4$Q-3,R-C$S
M0T1&,3)#,C1"1 T*4S$Q,T8P-C!%0T$Q-#@R-C!!0T1&,3)#,C1%,T$Q,$0R

```
M-C Q.#%#1#@S#0I3,3$S1C W,$8Q,D,R-$0Y,C!&.34S-38S,3)%,S S,3)%
M,S P1# P.#4-"E,Q,3-&,#@P-D4X,#0X,T8T.4$V-3-#1$8Q,#%!-C0Q0T1&
M,3 Q0C9!00T*4S$Q,T8P.3 T.$-$1C$P-T(V-#E#1$8Q,#=!-C!$0T1&,3 Q
M0T1&,39"#0I3,3$S1C!!,#)#03$U,S(V-#E#1$8Q,D-!,30T,C8T,C-&-$5#
M1$8Q-$(-"E,Q,3-&,$(P-$8R-#-"0D4T13A#13<T,#-#-$5"-C1%03$P.#(V
M144Y- T*4S$Q,T8P0S!#1$8Q,D-"-S1%0T1&,3)#03$P1#(V,C)#1$8Q03$R
M-$5!#0I3,3$S1C!$,#$W0C8T.4%",#A"-S0Y0C8T.$$Y,#!"-S0X0C8T14$Q
M,3@-"E,Q,3-&,$4P-$0R-T$R03$U.#(V,#<X,30U1C!&,$-$1C!&-#(P1D4V
M0@T*4S$Q,T8P1C U,S0V,$0P,$8V,C<P.4(W,3@P1#$V1D1!1C Q,C!&-#A$
M#0I3,3$S1C$P,#@Q0C<Q.#!$,39&1#@Q.#<V,D$T,$8Y-SA#1#9&,3%#-C@-
M"E,Q,3-&,3$P041%1C@V030P1CDW1#9&,3%#041%-C@Q,S S,3,R,S-#,@T*
M4S$Q,T8Q,C S-#,U,S8S-S,X,SDV,38R-C,V-#8U-C8S1C1",T8T03)##0I3
M,3$S1C$S,#-&-$-"-C$V030R,#(V,3,S0S1",C9&-C-#-$$R-D8R,S8-"E,Q
M,3-&,30P,T,T0T(V-$-!,3 X,C9%031&.3@X,4(V,3@Y.3@Q0T0U0@T*4S$Q
M,T8Q-3!&,3)#,C0Q-4-$1C$V03(T,3 V,D(W-$9#1$8Q,D,R-#@S#0I3,3$S
M1C$V,# X0T1&,39!,C0P,T)"-$8Y.3@Q.$-!13!&1#%&,3%#1CD-"E,Q,3-&
M,3<P,C<P-35!,D%&.#DX.#$Y1CDY.#%#1$8Q.#<T1D-$,#%!1@T*4S$Q,T8Q
M.#!#,#(T,#$X,4-#1C!%.#0U,#%#,#,U-$$T-48Q1# W138X#0I3,3$S1C$Y
M,#1#.$(X.34U-$$U131#,S4T03@X.$$V-48R-#DR-D5&-T,-"E,Q,3-&,4$P
M.#$T-3 Q0S S-31!-#5&,C0Y-T4T0SA".#DU-31!-45&00T*4S$Q,T8Q0C T
M0S,U-$$X.#A!-C5&,D$Y,C9%1D-$,#%#,#@Q,S4T.$-$#0I3,3$S1C%#,$-$
M1C$X-T$V,#$Y0D-$,#%#,#@Q.4(S-30X0T-&,4$Q,D8-"E,Q,3-&,40P-$0R
M-C%#-D4X,#0X,T8T.4%$,34R-#$R-D4X,#0Y040P,@T*4S$Q,T8Q13 P13(T
M,$(S1C0Y,T,T.$(V-#A!,48P,C9%0CDY.#%!1#9"#0I3,3$S1C%&,#)&,C4R
M0T$V,#)#-T9%,#A#-D9&-T4U-30X1C=!-C!!.$8-"E,Q,3-&,C P040S1D$V
M,$%#-T9%,#A!-C Q040R.$$V,#A#-T9%,#@Y00T*4S$Q,T8R,3!!-C U040R
M1$$V,#!#-T9%,#A!-C Q040R-$%$,#$X,31"#0I3,3$S1C(R,#4U-#A&-C0S
M,C8P0D%&,#$Y1D(X-#E!,3@P,C9&,SDY0C -"E,Q,3-&,C,P.#$Y.#@Q-48X
M0T%&,#$V-3 S13@R-D8Y-$$R-D8T.$,S-@T*4S$Q,T8R-# X,3E$.40Y1#E$
M-$$R-D8Y.#%!-C Q0S=&13 X0S9&1D$R#0I3,3$S1C(U,#=%-34T.$8W038P
M04%$-#E!-C Y0S=&13 X038P-4%$,44-"E,Q,3-&,C8P-# U-30X,S4T030U
M,# T,#=%-$,X0C@Y-34T035%-$,Y,@T*4S$Q,T8R-S S-31!038Q14%$,D(X
M.#A!.49!-# W03$P,#(V13E!-D)$#0I3,3$S1C(X,# X0S=&13 X038P-4%$
M,3E!-C P0S=&13 X038P,4%$-D0-"E,Q,3-&,CDP,3 Y.3@Q-48X0T%&,#$V
M-3 S13@R-D8Y-$$R-D8T.$,T-@T*4S$Q,T8R03 X,3E$.40Y1#E$-$$R-D8Y
M.#$V13@P-$0S1C1"038S.$0X#0I3,3$S1C)",$-$1C)&.$$V,SA#1$8R1CA!
M-C,X0T1&,D8X038R.$-$0T4-"E,Q,3-&,D,P1C)&.#-&-$1!-C(X0T1&,D8X
M038Q-$-$1C)&.$$V,$,Q0PT*4S$Q,T8R1#!#1$8R1CA!-C V0T1&,D8X038P
M,D-$1C)&.$$V,#%#1#-$#0I3,3$S1C)%,$8R1C@T-48S,T$S-30X,T8T0D$V
M.#!!1#!"040S-C-&0C<-"E,Q,3-&,D8P-$)!-D,P040P,T%$,D4X,3DW0C8P
M-$%!1D5"-S T.49&00T*4S$Q,T8S,#!!-$8P0D$T0D(W,# Q-C P-C(V,C$W
M,# S1#1$,C8P1D8Y#0I3,3$S1C,Q,#E&-C)!-$8P0D$T0D(W,# Y1#$V,# V
M,C8R,3<P,$$V-C0-"E,Q,3-&,S(P,#)#1$8R.3,X,39%,#(T0D$V,31"-S1#
M-34T.$8V048T00T*4S$Q,T8S,S P,3,U-#A!1$,S,T$T0S(V1C,X,31$-D8V
M138Y-S0V1C0U#0I3,3$S1C,T,#<R,C U-C8U-S(R,#,Q,D4S,#,Q,D4S,#0S
M,C U,S<T.3(-"E,Q,3-&,S4P-C$W,C<T,C T1#1&-$4S,#,X,C V1C9%,C U
M,#0S,D4Q,@T*4S$P-48S-C R13)%-$(-"E,Q,#=&.3 P,# P,# Q,#!&10T*
M4S$P-C@P,#!#0S@P-#=%-@T*4S$P-C@P,#1#0S@P-#=%,@T*4S$P-C@P,#A#
M0S@P-#=$10T*4S$P-C@P,$-#0SE!.3<W, T*4S$P-C@P,3!#0S@P-#=$-@T*
M4S$P-C@P,31#0S@P-#=$,@T*4S$P-C@P,3A#0S@P-#=#10T*4S$P-C@P,4-#
M0S@P-#=#00T*4S$P-C@P,C!#0S@P-#=#-@T*4S$P-C@P,C1#0S@P-#=#,@T*
M4S$P-C@P,CA#0S@P-#="10T*4S$P-C@P,D-#0S@P-#="00T*4S$P-C@P,S!#
M0S@P-#="-@T*4S$P-C@P,S1#0S@V140P-@T*4S$P-C@P,SA#0S@P-#=!10T*
M4S$P-C@P,T-#0S@P-#=!00T*4S$P-C@P-#!#0S@P-#=!-@T*4S$Q,S@P-#1#
M0S@P-#<T-3 Q0D8Y-#A#,T8P,$(V,#1!-#!&04$P13!##0I3,3$S.# U-$(W
M,#0V13 V,#$V13@P,#4S1C R-D5&1C V,T8P,S9%.3$-"E,Q,3,X,#8T1D8P
M-S$P,48Q.# S038P,D-$.40V-#$Y,#-!-C R0T1",0T*4S$Q,S@P-S0Y1#8T
M,3@P,T$V,#)#1#E$-C0Q.3 S038P,D-$.40V-$0T#0I3,3$S.# X-#$X,#-!
M-C R0T0Y1#8T,3DP,T$V,SA#1#E$,41!-C,X1C@-"E,Q,3,X,#DT0T0Y1#%$
M038S.$-$.40Q1$$V,SA#1#E$,41!-C(X0T1%0PT*4S$Q,S@P030Y1#%$038R
M.$-$.4-&-D$V,31#1#E#1C9!-C!#0T0Y0T%$#0I3,3$S.#!"-$8V038P-D-$
M.4-&-D$V,#)#1#E#1C9!-C Q0T0Y0T8V04$-"E,Q,3,X,$,T038P,$-$.4,W
M1D$V,#%#1#E#-T9!-C P0T0Y0S4Q038X-0T*4S$Q,S@P1#0R.$-$.40V-$$V
M,#)#1#E#,S%!-C$T0T0Y1#8T,T9!0T5$#0I3,3$S.#!%-#-&0C4S1D%$038P
M,4(W045"-T%&,T9",#-&0C$S1D(R-C8-"E,Q,3,X,$8T,T9",S-&0C0S1D5#
M039&1D(W.#!"-T(W0C=".$(W140P0@T*4S$Q,S@Q,#1#-D8Y.#E"-T,X0S9&
M.3A!0C=#.3-&138S1D4W,T9%.#8U#0I3,3$S.#$Q-#-&13DS1D)",T9"0S-&
M0CDS1D)!0S9&.3@X0C=%03(V,T(-"E,Q,3,X,3(T,3=#1#A$,T8U-4,R-C5&
M1D9&,C8P1#9%1D9%04$V,C9#-PT*4S$Q,S@Q,S1#1#E#,S%!-C$T0T0Y1#8T
M0T0Y14%%,C<Q1$(V0C!#,#DR#0I3,3$S.#$T-$8Y,#,R03 T04(Q.#(P,#9!
M,3$X.3$P,D$P,3A"-T(T034-"E,Q,3,X,34T038R-4-$.4,S,4$V,31#1#E$
M-C0S1C(V,T8R-T$V,#1"-0T*4S$Q,S@Q-C1"-S(P038U.$(W,C4Y04-#.#%"
M04$V1D9"-T5$,T9&,S-!#0I3,3$S.#$W-$(V1C-!0C U0T0Y0S,Q0T0Y1#=$
M03$P-#(W,3!!,3 Q.48-"E,Q,3,X,3@T,C9&-4(V1C,T0T$Q,#8R-3 Q-$9"
M-T8S,C!%,D(V0C5!- T*4S$Q,S@Q.30R-D9#0C9&,S(W,C T03(W,$4T03(W
M,$4T03(W,$4T049%#0I3,3$S.#%!-#(W,$4T03(W,$4R,$,S0T,X1D8V0T,Y
M,3<Q0T,Y,C(R.3$-"E,Q,3,X,4(T0T,Y-3DU0T,Y-C9!,#$P,30R0T0X1C$Y
M,C8T-#-&04)%. T*4S$Q,S@Q0S1#-D8X,#!#1#A&14-#-D8X,#%#1#A&14-#
M-D8X,#)#1#!$#0I3,3$S.#%$-#A&14-#-D8X,#-#1#A&14-#-D8X,#1#1#A&
```

```
M14-#-D8X-$(-"E,Q,3,X,44T,#5#1#A&14-#-D8X,#9#1#A&14-#-D8X,#=#
M1#A&14,R,0T*4S$Q,S@Q1C1"-D%",C<Q0D$V,45#1#E#,S$R,#!#038Q04-$
M.4,S,48P#0I3,3$S.#(P-#(P,#5!-C%"0T0Y0S,Q038S,D-$.40V-$-#.#$V
M14-$0C@-"E,Q,3,X,C$T.#4P04-$.#@Q,$-$.$%&04-$.#DU1#-&.$,S1D)&
M,T8U-@T*4S$Q,S@R,C1%13-&141!-D9&0C<X,#9%,#1%1C-&1C!"-D(U-#$P
M,3$S#0I3,3$S.#(S-#(X0C9"-3DW03$P-#(V,31"-D5&03$P,#(V,$4S0T8P
M.#<-"E,Q,3,X,C0T0C9&,$$Q,#4R-C R,T9&,$)&148R,# X0D9%1C-$145$
M- T*4S$Q,S@R-30R-T1!,T9%14-$.#(V,#(P1#-#0S@Q-D5#-D8Y,#(R-D$T
M#0I3,3$S.#(V-# S0T,X-3<R0C9&,#(W,4$T03(W,$(T03(W,$(T03(W1C -
M"E,Q,3,X,C<T,$(T03(W,$(R,#!#0T,X,S(U0T,X,S<X0T,X,T4S0T,P00T*
M4S$Q,S@R.#0X-#4P038P,4-$.4,U,31&0S<P,3 P,$5%-C!%0C8Y130T#0I3
M,3$S.#(Y-$$P-D5"-T8X0T0X.$5"039#-4-$.#1!,T(V.#%!,#9%,S4-"E,Q
M,3,X,D$T0C=&.$-$.#A%0D$V0T-#1#@T03-"-C@P03 V14(W1C@W10T*4S$Q
M,S@R0C1#1#@X14)!-D0Q0T0X-$$S,$5%.#$U0S9&.3 Q0T0X0T4W#0I3,3$S
M.#)#-#9&038Y.4-$.#1!,T,V1CDP,3(W,#5!-C(P0T0Y0T-&,4$-"E,Q,3,X
M,D0T0C9%-T$T0S R-C$P0C9!,T(W1CA"-D$T0C=&.4-$.$%&-@T*4S$Q,S@R
M130X,T$V.45#1#@T.35"-CA!0C=&.$(V.$)"-T8Y0T0X04$R#0I3,3$S.#)&
M-#@S039!-D-$.#0Y-4(V14$R-C$T,$5%.3$Q038P,4,W-S$-"E,Q,3,X,S T
M,#$P,#4U0S0S-49!0T0X1$5#039$.4-$.#1"-C-&0C8U0@T*4S$Q,S@S,31"
M-D)"0C=&.$(V0D-"-T8Y0T0X03@S039%-D-$.#0Y-4,W#0I3,3$S.#,R-#@Q
M038P,D-$.4,U,31&0S<P,3 P0C9".$$Q1D8R-S!#,$$-"E,Q,3,X,S,T03 V
M14(W1CA#1#@X14)!-D,V0T0X-$$S0C9"-T$Q1D9#0@T*4S$Q,S@S-#0R-S!#
M03 V14(W1CA#1#@X14)!-D-$0T0X-$$S0C9".3%&#0I3,3$S.#,U-$(W1CA"
M-D)!0C=&.4-$.$$X,T$V.45#1#@T.35"-D5!03(-"E,Q,3,X,S8T,C8Q,4$V
M,#%#-S Q,# U-4,V,S5&04-$.$1%0T$V1#DU, T*4S$Q,S@S-S1#1#@T0C8X
M,4$V,#-#1#E#-3%!-C Q0S<P,3 P0C9%049"#0I3,3$S.#,X-#(V-4,P144Y
M,$,U-4,T,S5&04-$.$1%0T$V0S9#1#@T,34-"E,Q,3,X,SDT0C8U-4,V,S5&
M04-$.$1%0T$V1#!#1#@T0C8P144Y,T5$1 T*4S$Q,S@S031"-D,S0C!#.4(W
M1D)"-D,R0C)#.$(W1D%#1#A$14-!-CDR#0I3,3$S.#-"-#E!0T0X-$(V0C9#
M,T,P1CDX04(W1D)"-D,R0S)&.3@Y14$-"E,Q,3,X,T,T0C=&04-$.$1%0T$V
M031#1#@T0C9"-D,S0C!%-4(W1D(Y1 T*4S$Q,S@S1#1"-D,R0C)%-$(W1D%#
M1#A$14-!-D1!0T0X-$(V.#%!-D4R#0I3,3$S.#-%-# T0T0Y0S4Q038P,4,W
M,#$P,$(V045"-T9",T9&04-$,T,-"E,Q,3,X,T8T.41%0T$V0S!#1#@T.35"
M-D%&0C=&0D-$.41%0T$V0S-#00T*4S$Q,S@T,#1#1#@T.35"-D%$0C=&0D-$
M.41%0T$V0S9#1#@T.35"-C!"#0I3,3$S.#0Q-$(P0C=&0D-$.41%0T$V0SE#
M1#@T.35"-D(Q0C=&0D-$-C$-"E,Q,3,X-#(T.41%0T$V0T-#1#@T.35"-D(T
M0C=&0D-$.41%0T$V.31"-PT*4S$Q,S@T,S1#1#@T.35"-D(Q0C=&0D-$.41%
M0T$V.3=#1#@T.35"-C V#0I3,3$S.#0T-#A#0C=&0D-$.41%0T$V1$-#1#@T
M.34X,4$V,#5#1#E#.3,-"E,Q,3,X-#4T-3%!-C Q0S<P,3 P,T8Y,$(V139!
M-#-&0C=&0D-$.41%00T*4S$Q,S@T-C1%0T$V0S5#1#@T03-"-D4Y030S1D(W
M1D)#1#E$14-!-C@Y#0I3,3$S.#0W-$-%0T0X-$$S0C9%-T$T,T9"-T9"0T0Y
M1$5#038Y.4-$.44-"E,Q,3,X-#@T.#1!,T(V13A!-#-&0C=&0D-$.41%0T$V
M03)#1#@T03-&. T*4S$Q,S@T.30X,4-$.4-&-D(V1D1#1#E#0T9"-D9%0T0Y
M0T-&.#%#1$-&#0I3,3$S.#1!-#E#1C9"-D9#0T0Y0T-&0C9&1$-$.4-#1D(V
M1D5#1#E#-# -"E,Q,3,X-$(T0T8X,4-$.4-&-D(V1D-#1#E#0T8P1D9%,$-"
M-D9$0T0X,@T*4S$Q,S@T0S0Y0T-&038R14-$.4-#1C(P,$%!-C)%0T0Y0T-&
M0C9&1#0T#0I3,3$S.#1$-$-$.4-#1D(V1D5!-#=&0T0Y0T-&.#%#1#E#1C9"
M-D9#0D(-"E,Q,3,X-$4T0T0Y0T-&0C9&1$-$.4-#1C!&1D4P14(V1D5!-#=&
M0T1!,@T*4S$Q,S@T1C0Y0T-&038R14-$.4-#1C(P,$-!-C)%0T0Y0T-&0C9&
M13$Q#0I3,3$S.#4P-$$T-T9#1#E#0T8X,4-$.3A#04,V1CDP,#(V-#=!-C$Y
M-D0-"E,Q,3,X-3$T0T0Y0S,Q-#5!0C$V0T0Y.$8T0C9!0T%",$%"-SDV0C8T
M, T*4S$Q,S@U,C0Q-D)%,3A!-#(P,C9&,D(V04-",3DV,C9&,C0U04(Q.$(R
M#0I3,3$S.#4S-$-$.3A&-$$V,$%#1#E$-C0T-4%",4%#1#DX1C0T-4%",#D-
M"E,Q,3,X-30T,C1#1#DX1C0T-4%",S%#1#DX1C0T-4%",T%#1#DX1C1!.0T*
M4S$Q,S@U-31!-C$S0T0Y0S,Q.#%"-D%%03$P,C(V,$%"-D%$030P,T9%#0I3
M,3$S.#4V-#(V,#1!-C%$,C P-T)%044X0S5!1#9!.4,Q.#%"-D8P,S8-"E,Q
M,3,X-3<T,C<Q031!,C<P0C1!,C<P0C1!,C<P0C1!,C<P0C(P,$,Y-@T*4S$Q
M,S@U.#1#0S@V,D9#0S@V.#)#0S@S13-#0S@T-3!!-C V0T0Y0T$W#0I3,3$S
M.#4Y-#4Q-$9#-S Q,# P144V,$5"-CE%03 V14(W1CA#1#@Y,#(-"E,Q,3,X
M-4$T,C)!-D,U0T0X-$$S0C8X,4$P-D5"-T8X0T0X.3(R038S, T*4S$Q,S@U
M0C1#0T-$.#1!,T(V.#!!,#9%0C=&.$-$.#DR,D$V1#%#1#0T#0I3,3$S.#5#
M-#@T03,P144X,35#-D8Y,#%#1#A#-D9!-CDY0T0X-$$S0C8-"E,Q,3,X-40T
M0S9&.3 Q,C<P-4$V,C!#1#E#0T9"-D4W031#,#(V,3 W,@T*4S$Q,S@U131"
M-D$S0C=&.$(V031"-T8Y0T0X04(R038Y14-$.#0Y-3-%#0I3,3$S.#5&-$(V
M.$%"-T8X0C8X0D(W1CE#1#A!0C)!-D$V0T0X-#DU-3@-"E,Q,3,X-C T0C9%
M03(V,38P144Y,3-!-C Q0S<P,3 P-35#-#,U1D%#-0T*4S$Q,S@V,31#1#A%
M,3-!-D0Y0T0X-$1&,T9"-D(V0D)"-T8X0C9"0T%%#0I3,3$S.#8R-$(W1CE#
M1#A!0C)!-D4V0T0X-#DU.#%!-C W0T0Y0S4Q,D8-"E,Q,3,X-C,T-$9#-S Q
M,#!"-D(X03%&1C(W,$-!,#9%0C=&.$-$.#E#-PT*4S$Q,S@V-#0R,D$V0S9#
M1#@T03-"-D(W03%&1C(W,$-!,#9%0C=&.$$S#0I3,3$S.#8U-$-$.#DR,D$V
M0T1#1#@T03-"-D(Y0C=&.$(V0D%"-T8Y1C4-"E,Q,3,X-C8T0T0X04(R038Y
M14-$.#0Y-4(V14$R-C$Q038P,4,W,#$X.0T*4S$Q,S@V-S0P,#4U0S8S-49!
M0T0X13$S039$.4-$.#1$1C@Q038P,S8Q#0I3,3$S.#8X-$-$.4,U,4$V,#%#
M-S Q,#!"-D5!,C8U0S!%13DP0S4U,T8-"E,Q,3,X-CDT0S0S-49!0T0X13$S
M039#-D-$.#1$1C4U0S8S-49!0T1"10T*4S$Q,S@V030X13$S039$,$-$.#1$
M1C!%13DS14(V0S-",$,Y0C=&0D$R#0I3,3$S.#9"-$(V0S)",D,X0C=&04-$
M.$4Q,T$V.4%#1#@T1$9"-D,S0C@-"E,Q,3,X-D,T0S!&.3A!0C=&0D(V0S)#
M,D8Y.#E"-T9!0T0X13$S038R0PT*4S$Q,S@V1#1!-$-$.#1$1D(V0S-",$4U
M0C=&0D(V0S)",D4T0C=&03-&#0I3,3$S.#9%-$-$.$4Q,T$V1$%#1#@T1$8X
```

```
M,3A"0C8R-4(V,C)!0C4P04$-"E,Q,3,X-D8T.3="-C(Q03E#,T(W,C9"1C(W
M,T-!0T$V-3A"-S(U0C8U1 T*4S$Q,S@W,#0P,4$T-S@T-#0T-#0Y-SA#1#9!
M.4(Q0C="-3-$14,R-S8Y#0I3,3$S.#<Q-# S0T,X-SDS,T-",T(V0C-!,3!!
M,C4W,S-&0C-!-C5#1#D-"E,Q,3,X-S(T0C<R-3-#0C)"-D(R03$S0S(U-C4S
M1D(R,T-",4(V0C$V,PT*4S$Q,S@W,S1!,3-#,C4U0C-&0C$S0T(T0C9"-$$Q
M,3@R-3(P,T9"-#DY#0I3,3$S.#<T-$(V.#!"-T(W0C8X,4(W0C@U-4)",S5"
M.34U0S(S-4,P0T0-"E,Q,3,X-S4T-35#-#,U0S9!-D9&0C<X,#-&.#$S1D)"
M,T9"0S-#0C X, T*4S$Q,S@W-C1"-D(P03$Q.#(U,CDS1D(P,T-!1D-$.#4U
M04(Q048R-#A!#0I3,3$S.#<W-#%%038P,4(W048U-4,R,S5#.#-#045"-D%%
M03$P0S(U.3(-"E,Q,3,X-S@T,$5!-C Q0C=!13-#041"-D%$03$V-#(U,#(S
M1D%$,T0R-@T*4S$Q,S@W.31%1#(V-S-"-D)&03$S,3(T,T-!,3$T,C0S0S0X
M.3<X0S(T#0I3,3$S.#=!-$0V.#=",3@W1#8X-T(R.#<X.#A!1D0R,#)#.#@Q
M-S@X,30-"E,Q,3,X-T(T,CDX.#(Y.#@R.3@X,CDX.#(Y.#@R.3@X,CDX.#)!
M.#DR-PT*4S$Q,S@W0S0W-#A",#,X0C!%.$(R0CA"-D$X1#9!.#=%,3DX,# Y
M.$-##0I3,3$S.#=$-#@U.3A!1#@W145!1#$V,C P,C-#0D8X03@P0T0X.#A!
M.#D-"E,Q,3,X-T4T0T0X03$S0T0X0C=!0T0X1$,P.#$S0T5%.#$S0SA#0C8X
M,0T*4S$Q,S@W1C0X0T$Q,T,R-C!%,T8X0T-$.#@Q,$-$.#DV.4-$.$%&03DT
M#0I3,3$S.#@P-$-$.$1$.#-&0D8X,4$V.#!"-S U,C!#1C-&.#@S1C@Y-$8-
M"E,Q,3,X.#$T,T9"1#@Q,49%-C0U1C@P,$-$.$5&1D$V-#1#1#A&-30Y1 T*
M4S$Q,S@X,C1!-C@V0C<P-3@Q.#%!-C@P0C<P-30U1C@P,$-$.$5&1D1$#0I3
M,3$S.#@S-$$V0D5#1#A&-30S1D%"0T0X1C8W0C<Y14-$.$9%0T-$,#4-"E,Q
M,3,X.#0T.$8V-T-$.$9%0T-$.$8V-T-$.$9%0T-$.$8V-T-$.$9". T*4S$Q
M,S@X-31%0T-$.$8V-T-$.$9%0T-$.$8V-T-$.$9%0T-$.$8V-S1"#0I3,3$S
M.#@V-$-$.$9%0T-$.$8V-T-$.$9%0T-$.$8V-T-$.$9%0T(V14,-"E,Q,3,X
M.#<T04(R-S V,T-%-C%%138R,#!#0C8Y14$Q04$R-T8T04(V,0T*4S$Q,S@X
M.#0V14(W.44S0T)$.#$P144V,C9"-C@P03%&1C(V,#A"-D-&#0I3,3$S.#@Y
M-#E%0C<X,$(W.#$R,#!%0C8Y14(Q.# R,S R0C<X,$(Q,#,-"E,Q,3,X.$$T
M.#$R-# R0C<X,4(V.45"0C@Y0C<X.3(T,#(S0S@X.#$Y10T*4S$Q,S@X0C1"
M-CA%,D$P,30P045%-S0R-$0R03 Q-4,Y1C-$.$4R04,R#0I3,3$S.#A#-# Q
M-#!!0C(P0C<Y-D(V.38R03 Q-#!"-SDQ,T8Y,$-$04,-"E,Q,3,X.$0T.41!
M-4(V.38R03$P0C9#0D$Q,C R-S V038R1$(W0T$P-0T*4S$Q,S@X130R,# T
M038R1$(W0T(X,4(V1C@R03 Q-#!!144W-#(T1#0Y#0I3,3$S.#A&-#)!,#$U
M0SE&,T1&.#)!,#$T,$%",C!"-T9&0C9&1C)!-$$-"E,Q,3,X.3 T,#$T,$(W
M1D(S1D9!0T0Y1$5#0C9&1C)!,3!"-D9$03$Y00T*4S$Q,S@Y,30R,#(W,#9!
M-C)$0C=&0S(P,#1!-C)$0C=&1#@Q0C9&.$$R#0I3,3$S.#DR-#)!,#$T,#0T
M0C=&0C-&1D%#1#E$14-"-D8X,D$Q,$(V0C$-"E,Q,3,X.3,T1D1!,3(P,C<P
M-D$V,D1"-T9#,C P-$$V,D1"-T9$.#$Y,@T*4S$Q,S@Y-#1"-C@X0C<Y,$(V
M.#E"-SDQ0C9"1$(W.3)#1#E$.#9"-D(Q#0I3,3$S.#DU-#DT03 V14(W.$5#
M1#@X0C0X,3-&.#(S1C@S,T8X-#-&,3D-"E,Q,3,X.38T.#4Q144W,4-%-S-&
M.$$S1CA",T8X-C-&.#<S1D)%.#%$-@T*4S$Q,S@Y-S1"-D4W031#,#(W,$)"
M-D4W,$-%-S R030S1D$T0D9"-S)$#0I3,3$S.#DX-$4W-#5&.#$P0T0X149&
M0T0X1D1#039!-4-$.$8U-$$V-S@-"E,Q,3,X.3DT1$9#1#A&-31!-C Q0T0X
M1C4T0T0X1C8W0T0X1C8W0C=!0PT*4S$Q,S@Y031!,D-$.$8V-T(W03%#1#A&
M-C="-T$P0T0X1C8W0C<Y1D-&#0I3,3$S.#E"-$-$.$8V-T-$.$8V-T-$.$8V
M-T-$.$8V-T-$.$8V-T-$,3,-"E,Q,3,X.4,T.$8V-T-$.$9%,3(W,$1"-D4W
M-$-!04,P0C=%-S-&030V- T*4S$Q,S@Y1#0S1D$S,C S04(V.49",3@R,C(Q
M.#(U14)"-D$P0C$X,T8W#0I3,3$S.#E%-#(R,3 R-44S0C9!,4(Q.#0R,C X
M,C5$0D(V03)",3@U,#$-"E,Q,3,X.48T,C5$-4(V03)",#@U0C=!-$(V03%"
M,C@T0C=!,T(V03(T10T*4S$Q,SA!,#1"-S@U0C9!,4(W.#1"-D$P0C<X,T(V
M.49"-S@R.#%"-C-"#0I3,3$S.$$Q-$4W031#,#(V,T%"-D$T0D(X-T(W.#="
M-D$S0CDX-D(W-T$-"E,Q,3,X03(T.#8S0T)%0C9!,T(Q0D(R-3$P,C(P-D(V
M031",4)#,C-",@T*4S$Q,SA!,S0P.$(V03-"-T)"0C9!-$(W0D-"-D$S0C$X
M03(U,3 R,D$S#0I3,3$S.$$T-# V0C9!-$(Q.$(R,S X0C9!,T(W.$%"-D$T
M0C<X0C@Q03 -"E,Q,3,X034T,T8Y-D(V.$4R-S X03$P,3(V,45!-C=&0C<Y
M-D(V.$8R.0T*4S$Q,SA!-C1!144Y-#(U-#0V.#<Y1D)".38Y-S@V-30T-C)!
M,#$U0T0V#0I3,3$S.$$W-$)&.3$S1CDP0T0Y1$$U.#%!-C,Y0C=#0D(W0T,X
M,3-&.4(-"E,Q,3,X03@T1D-"-D8X,C<P.$$Q,#$R-C%%038W1D(W1D-"-D8Y
M045%00T*4S$Q,SA!.31%.30R-30T-C@W.49"0D9#.3<X-C4T-#8R03 Q-4-"
M1C)&#0I3,3$S.$%!-$9",T9&04-$.41%0S@Q038S.4(W1D1"-T9%.#$S1D9#
M048-"E,Q,3,X04(T0C9&.#(W,#A!,3 Q,C8Q0T$V0D-"-T9#0C9&.4%%0D-"
M1@T*4S$Q,SA!0S0T,C@W.49"0D9#.3<X-C4T-#8R03 Q-4-"1D9",T9&031%
M#0I3,3$S.$%$-$-$.41%0S@Q038S.4(W1D1"-T9%.#%"-C@V0C<Y,$(V0C4-
M"E,Q,3,X044T.#="-SDQ0C9"14(W.3)#1#E$.#9"-CDS0C<X14(V.30R00T*
M4S$Q,SA!1C1"-SA&0T0X034T.#%!13!&.$,V1C<P-4$R049".#$Q1D(U#0I3
M,3$S.$(P-$4X038S1D%$-T$R-S R,45%.#@Q,$5%.#$Y038P,T(W-$$-"E,Q
M,3,X0C$T0T%!-C Q,T8Y1$-$.$4U.4-$.$)".#(T,#<S04-!,C9%-PT*4S$Q
M,SA",C1&,#%%13@T1D(W034X,3!%13@S,D$V,#-"-T-!-D4P,35!#0I3,3$S
M.$(S-#E$038P,4-$.$4U.4%$-T,R-#!!,T%#03(V1C Q144X0D4-"E,Q,3,X
M0C0T,T9!-3(P,3A"-SDV0D)!-4(W035!,3 W,C8P14(V.39$, T*4S$Q,SA"
M-30R-S T03$P-S(V,#9"-D$U04(P.$(W035"-D$U0T)&.#@V#0I3,3$S.$(V
M-#(X030P1D(W034X,4$V-T9!1#$U,C<P,C%%13@P1D4X,S@-"E,Q,3,X0C<T
M,#0S0T4X,45%.#@Q038W,$)"034Y-SA#-D,P,#@Q0C<P,0T*4S$Q,SA".#0Y
M-T$V,#A"-SDY-#5&.# X0T0X149&0T0X1D1#038U-3<V#0I3,3$S.$(Y-$-$
M.$8U-$$V,#=#1#A&-31!-C P0T0X1C4T0C8Y-T-$-3 -"E,Q,3,X0D$T.$8U
M-$-$.$8V-T-$.$8V-T-$.$9%,3(W,#8S03DY,C9&,0T*4S$Q,SA"0C1$-$$V
M,#$X,3-&.39"-CDV-#@T.#0X.3<X0T(V-#!$,4-%#0I3,3$S.$)#-$8X.# R
M-C,U0C8T,40Q1C@X,3(V,D5"-C0R1#%&.#@R1C(-"E,Q,3,X0D0T,C8R-T(V
M-#-$,48X.#,R-C(P0C8T-$0Q1C@X-#(V,3DR1@T*4S$Q,SA"131"-C0U1#%&
M.#@U,C8Q,D(V-#9$,48X.#8R-C!"0C8T-S@S#0I3,3$S.$)&-$0Q1C@X-S(V
```

```
M,#1"-CDV.3@X,3-#.39"-CDV03$P.#(S030-"E,Q,3,X0S T0C4Y.3@Q,T8Y
M-D(V.38T.#0X-#@Y-SA#0C8T,$4Q-3 T00T*4S$Q,SA#,30R-C)%0C8T,44Q
M-3$R-C(X0C8T,D4Q-3(R-C(R0C8T,S$U#0I3,3$S.$,R-$4Q-3,R-C%#0C8T
M-$4Q-30R-C$V0C8T-44Q-34R-C$P1C0-"E,Q,3,X0S,T0C8T-D4Q-38R-C!!
M0C8T-T4Q-3<R-C T0C8Y-CDX.#$P-0T*4S$Q,SA#-#0S0SDV0C8Y-D$Q,#@R
M,T)$.3DX,4%%,S T,D%",$9"-T-!#0I3,3$S.$,U-#A&.49!.4$Y0C<X14(V
M035!13 S-#)"0CA&.3="-CA%1#0-"E,Q,3,X0S8T03DP,#@W.$$W14-!-T5#
M0C=%0T,X,4%%,S T,D%",$8P0PT*4S$Q,SA#-S1"-T8Y.49!.4$Y0C=&.$(V
M035!13 S-#)"0D8Y.3="-C1$#0I3,3$S.$,X-$8X03DP,#@W.$$W149#-T5&
M1#=%1D4X,3-&.3)!-C!&0C(-"E,Q,3,X0SDT0C<Y.$$V,#1"-SDW,T8Y-D(V
M.3A"0CDW030P1CDW.$,S00T*4S$Q,SA#031"-CDV14(W,$(W.38S03DW,D%%
M14(V.3)",3DV,C(P.#(V#0I3,3$S.$-"-$(V.39"-SDR0C8Y.$(W.$0S03DX
M,D%$-C-&.3 S1CDQ,30-"E,Q,3,X0T,T038P-$(W.3A"-CDX0D(X1#DW.$-%
M-C<P0D4Y.#0R0D(T,0T*4S$Q,SA#1#0Y,4(W.3$Y1D(Y.3!"-SDP,T$Y.#(V
M13A"-CDQ044R1#@R#0I3,3$S.$-%-#0R0C<Y,4(V.3!"1CDP044R1#0R0D(Y
M,$(W.3!#1#E$-#0-"E,Q,3,X0T8T.#9"-CA$030P1D%%,D0T,D)".31"-SDQ
M.49".3DS0C<Y00T*4S$Q,SA$,#0Y,#,T.3 S-CDQ0C8Y,#(W,39!,3 Q,C(P
M-D(V.3%!,3!"#0I3,3$S.$0Q-#8X,C4P0T(V.3%!,#8X0C<Y,4(V.3!!,C Q
M0C<Y,$-$,44-"E,Q,3,X1#(T.41!-3@Q.4)#1#A",#,Y03E$.4)#1#A",$4Y
M03E$.4(W. T*4S$Q,SA$,S1#1#A",D(Y03E$.4)#1#A"-D$Y03@Q040R.34U
M0S(S-40W#0I3,3$S.$0T-$,P,S5#.#,U0T4S-40P,S5$,C,U1#0S-40V,S5$
M.#,U1CD-"E,Q,3,X1#4T1$$S-41#,S5$13,U13 S-44R,S5%-#-&13DS1D,T
M,T8U10T*4S$Q,SA$-C1#-3-&0S8S1D,W.#%"-D5!,C<P-C-&0S(S1D,S,C T
M0C9&#0I3,3$S.$0W-#%&13DT-48Y.#!#1#A%1D9#1#A&1$-!-D$U0T0X1C4T
M.3@-"E,Q,3,X1#@T039$1D-$.$8U-$$V,#%#1#A&-31#1#A&-C=#1#A&-C=#
M.0T*4S$Q,SA$.31"-T,S0T0X1C8W0C=#,D-$.$8V-T-$.$8V-T-$.$8V-T-#
M#0I3,3$S.$1!-$-$.$8V-T-$.$8V-T-$.$8V-T-$.$8V-T-$.$8V-T-$,48-
M"E,Q,3,X1$(T.$9%,3(W,#="-D4Y-$-!03@P0C=%.3@Q,T9#-#-&0S5$, T*
M4S$Q,SA$0S0P144Y,$-"-D,S0C!#,4(W0S5"-D,R0C)#,$(W0S0X,31##0I3
M,3$S.$1$-$-$.41!-3@Q.$-!13$U139#144W1# U03)!1CDP144Y0T0-"E,Q
M,3,X1$4T,#8U-4,R,S5#13(P,# X,34U1D$V-3 S13<R,S%#.4(T,@T*4S$Q
M,SA$1C0S-3DP-D4P03DR0T0Y1#@V-34Y,T(V.34Y04$Q,#4R-3$T#0I3,3$S
M.$4P-# R048P,3,U1D%#1#E$14,Q149%.#%#1#E$14,X,3E",30-"E,Q,3,X
M13$T-35&03,U.3!!-D$S0C<Y,D-$.4)#0C,T.30S.3DS,SE!- T*4S$Q,SA%
M,C0Y-3,T.30S.3DS,SDY-34U.35"13DS,S5&03E!-35&048P#0I3,3$S.$4S
M-#8U,#-%-S(S,4,Y0C,U.3 V13!!.3)#1#E$.#8U-3DS-4$-"E,Q,3,X130T
M0C8Y-3E!03$P-3(U,#)!1C Q,S5&04-$.41%0S%%1D4Q-PT*4S$Q,SA%-30X
M,4-$.41%0S@Q0C<Y04$V,3!"-T8W0T0X1C$Y,C<P,S5%#0I3,3$S.$4V-$-#
M.$5%-T$V1C!#1#A&-31"-CE!0C<T,$$V,#A"-SDV,S$-"E,Q,3,X13<T0T0X
M1C=#,S8Y0D-$.$8W0S,V.4-"-C0P0T0X1C,V0C<U. T*4S$Q,SA%.#0T,#-!
M.38R-D5"038S.$(W.39#1#A&-T,S.3DW0T0X1CA!#0I3,3$S.$4Y-#=#,SDY
M-T(V.3=!.# Q,# Y1# Q-#8T-C,V-#<S-C0V-C4-"E,Q,3,X14$T,S8T-3,V
M-#0S-C0S,S8T,C,V-#%"-C0W-#DT.4-$.$8W,@T*4S$Q,SA%0C0S-C-!.38R
M-D0T,T9!0D(V-#!#1#A&14-"-C0Q0T0X1C)&#0I3,3$S.$5#-$5#0C8T,D-$
M.$9%0T(V-#-#1#A&14-"-C0T0T0X1D5#14(-"E,Q,3,X140T0C8T-4-$.$9%
M0T(V-#9#1#A&14-"-C0W0T0X1D5#0C8P. T*4S$Q,SA%131!0C(W,3<S1C0P
M,T8T,3-&-#(S1C0S,T8T-#-&-#4S1C0Y#0I3,3$S.$5&-#0V,T8T-S-!1C<R
M-S S0T,X135&.#%"1CDV040Q-D$V-$(-"E,Q,3,X1C T-35!1#1$038P.$(W
M.3A"13DV1C8U0T)&.39!1#0Q,T%%00T*4S$Q,SA&,30Y.#(V1C0X0S@Q,3 P
M-4%%1D$U038R-C(V,C8R,C9&.4-##0I3,3$S.$8R-#$Q,#5!-D9&045$,T(T
M,#$V,C8R-C(V,C5!,C9&-T$T034-"E,Q,3,X1C,T,#$X,3$P,#5!-3 Q,C<P
M,C$Q,#5!13%%-4$R-D9$,# V- T*4S$Q,SA&-#0P,3 P-#9!135!-4$R-D9$
M,3$P-4%%,30U03(V1D0X,3<W#0I3,3$S.$8U-$%$,D-!1$1%041$0T%$1$%!
M1$0X041$-D%$1#1!1$0R.$0-"E,Q,3,X1C8T041$,#@Q039&1D%$0T)!1$,Y
M041#-T%$0S5!1$,S040V-0T*4S$Q,SA&-S1#,4%$0D9!1$)$040P-S@Q039&
M1D%$0C8T.3@Q0C=!045!#0I3,3$S.$8X-$(X03="-T$X0C9!-D(W03<S1D$V
M038P.$(W03E"-D$X,3 -"E,Q,3,X1CDT-48T-C(T,#$U0S-!03DR-D8X0D9!
M.3 Q03DP0T$V,#%$1 T*4S$Q,SA&031".$$W0C=!-T$V0S!".$$V0C=!-D(V
M03@U1C0X-3DT.#,U#0I3,3$S.$9"-#4Y-#@U.30X-3DT.#4Y-#@U.4(W03E"
M.$$W0C=!-SE&,3 -"E,Q,3,X1D,T0CA!-D(W039"-D$Y-#@U.4(W03E".$$W
M0C=!-SE&0C@V00T*4S$Q,SA&1#1!-D(W039"-D$Y0C9!03@Q,T9!-S-&038X
M,4$V,#%".#E"#0I3,3$S.$9%-$$W,C8P-$$V0C!".$$V.#%".$%".3<X0T0V
M04$Q-D(W03 -"E,Q,3,X1D8T04(X,4$V,#%"-T(V038Q,D-$.4,S,3-&1C0S
M0T5#039$-@T*4S$Q,SDP,#0P14-$.4-&-C-&.3A"-CDX03$P-3(V,49!-C$T
M0T0Y0T(X#0I3,3$S.3 Q-#,Q038X1D(W-3!"-D(T0C<Y,3-&.3!#1#E$035"
M-D-"0T$-"E,Q,3,Y,#(T0C<U,4(V0T-"-S4R,T8U,T-#.3 Y.$$V.#9"-S4P
M038T-@T*4S$Q,SDP,S0R1D(W-3-"-S4V038R,$(W-3E!-C-!0C<U0S-&-49"
M-D,U#0I3,3$S.3 T-$%%0C<Y,3-&.3!#1#E$035"-D-"0C<U,4(V0T-"-S4R
M,S -"E,Q,3,Y,#4T0C9!1D(W.3$S1CDP0T0Y1$$U0C9#0D(W-31"-D-#0C="
M. T*4S$Q,SDP-C0U-4(V041"-SDQ,T8Y,$-$.41!-4(V0T)"-S4W0C9#0S Y
M#0I3,3$S.3 W-$(W-3A"-D(P0C<Y,3-&.3!#1#E$035"-D-"0C<U04(V,#4-
M"E,Q,3,Y,#@T0T-"-S5"0C9",4(W.3$S1CDP0T0Y1$$U0C9#0D(W-41$. T*
M4S$Q,SDP.31"-D-#0C<U130U,# U,$-$.4-"04)%.3@X0T0V03E%,S,U#0I3
M,3$S.3!!-$-$.4-&-D(V0C5!,49&,C=&04$Q,#0R-S$P03$P,#(W.#D-"E,Q
M,3,Y,$(T,#A!,3 R,C<P0D$Q,#,R-S W,T9&-#(P139#0SDQ,T4R-0T*4S$Q
M,SDP0S1!-C Q0C<Y-D(V1C0R-S!!03$P0C(U-C4S048T038P-4)!#0I3,3$S
M.3!$-$(W.39"-D(U03$P,S(W,D)"13DX.$-$14$Y0T0V0T%$.$(-"E,Q,3,Y
M,$4T139!1$$S,#(R-C$Q0T0X-35!0C<Y-D)%.3@X0T1%03E!-PT*4S$Q,SDP
M1C1#1$4V041",3DV,C P,T0Q03E$,S(S,D-$-D$Y1$)%-T,Q#0I3,3$S.3$P
```

```
M-$%$,C R-4)%.3A$14$Y0T0X0S9!041%-D%$,D(P-40Q.#0-"E,Q,3,Y,3$T
M03E$0C(T,31$-D$Y1#-%-T%$03,P,C(V,$)#1#@U-4$R,PT*4S$Q,SDQ,C1"
M13DX1$5!.4-$.$-%-T%$,T-&-$$V1D9"-T(U0T,Y,$0P#0I3,3$S.3$S-#!!
M,T-&-$$V1D9"-T(U0T,Y,$$W0C9"-4$Q,# R-D9!040-"E,Q,3,Y,30T,T,Y
M.$(V.3A!,3 V,C9%-D,V1CDP,$$T,#-"-S0P0S8Q1@T*4S$Q,SDQ-31&.3 Q
M030P,4(W-#%#-D8Y,#)!-# Q0C<T,D(V0C!",$9"#0I3,3$S.3$V-$(T0C<T
M,S-&14-!-C!#0T0Y0T8V0T,Y,C Y038P,$-$,S,-"E,Q,3,Y,3<T.4,S,4$V
M,CA#1#E$-C1#-D8Y,#!!-# S0C<T,$,V1CDV,@T*4S$Q,SDQ.#0P,4$T,#%"
M-S0Q0S9&.3 R030P,4(W-#)#-D8Y,#-"-S8Q#0I3,3$S.3$Y-#0S0C8T,$%"
M,$)#1#E#,S%#1#E$-T1!,3 T,C<Q1D$Q0T(-"E,Q,3,Y,4$T,#(R-C!&03$P
M,S(V,#(R,$5&0C8T,#1!,D$P0T$V,#,X-@T*4S$Q,SDQ0C0R,# X0C8T,#1#
M03$P-#(V,#$T1D(W-# R,$0S0C8T,30Q#0I3,3$S.3%#-$%",4-#1#E#,S%#
M1#E$-T1!,3 T,C<Q.$$Q,#(R-C!".3<-"E,Q,3,Y,40T03$P,S(V,#(R,$5&
M0C8T,31!,C P,T(V-#$T0T$T,#$V, T*4S$Q,SDQ131"-S0Q,C!$04(V-#)!
M0C$W0T0Y0S,Q0T0Y1#=$03$P-$$U#0I3,3$S.3%&-#(W,3-!,3 R,C8P-D$Q
M,#,R-C R,C!%1D(V-#(T0T$T.4(-"E,Q,3,Y,C T,#%"-S0R,C!$1CE"-#5&
M.3 P0T1&,# S,T8T-#-&-#5"1 T*4S$Q,SDR,30S1C0V,T8T-S0U1CDP,$-$
M1C P-CE!0T,X,39%,#$P,44S#0I3,3$S.3(R-#(T0T0X1C$Y,C8R,D$V,#%#
M1#E#,S%!-C(X0T0Y1#8T-S@-"E,Q,3,Y,C,T038P1D-$.4,S,4-$.40W1$$Q
M,#$R-S V03$P-#(W,$(T00T*4S$Q,SDR-#0R,$8S0T,Y-3<R0T,X,49&0T,X
M,C V.4(T-48X,#!#1$5"#0I3,3$S.3(U-$8P,#,T-48X.#!#1$8P,#,Y03-&
M.41!-C$P0T0X134Y0C8-"E,Q,3,Y,C8T-34T,#,U-C0U-30R,S4V-C4U-#0S
M-38X-34T-C,U-D$R-@T*4S$Q,SDR-S0S0SE$038Q,$-$.$4U.34U-# W-38T
M,C8Q-#4U-#(W-45&#0I3,3$S.3(X-#8V,C8P134U-#0W-38X,C8P.#4U-#8W
M-39!,C8P,C(P1#8-"E,Q,3,Y,CDT-T-!-C%&0T0Y0S,Q-#4P,#8T0T0Y13,T
M-D4Y-#4P-#4P0PT*4S$Q,SDR030P,#4P0T0Y0T)!-#4P,#0P0T0Y13,T-D5$
M-#4P-#4P,#0X#0I3,3$S.3)"-#4P0T0Y0T)!,T8Y.#-$.3@R-C$V039!-4-$
M.4-&-D$V1D(-"E,Q,3,Y,D,T,D%#1#E#0T9!-D4U0T0Y0T8V038R,$-$.4-#
M1C(P,30Q. T*4S$Q,SDR1#1!-D$U0T0Y0T8V038R,$-$.4-#1D$V135#1#E#
M1C9!-C1%#0I3,3$S.3)%-#)!0T0Y0T-&0T0Y1#=$03$P-#(W,$5!,3 R,C<P
M-D$Q13(-"E,Q,3,Y,D8T,#,R-S R,C!%1C,S.3@R,$)$,T0Y.#(V,3 U-38T
M,S4X00T*4S$Q,SDS,#0T,#4U-C8S-30R-34V.#,U-#0U-39!,S4T-CE"-#5&
M.#E"#0I3,3$S.3,Q-# P0T1&,# V.4$S1CE$038Q,D-$.$4U.3E"-#5&.# X
M0S -"E,Q,3,Y,S(T0T1&,# V.4$S1CE$038Q1$-$.$4U.34U-# S-38T-34P
M,@T*4S$Q,SDS,S0T,C,U-C8U-30T,S4V.#4U-#8S-39!,T,Y1$$V,41#1#9&
M#0I3,3$S.3,T-#A%-3DU-30P-S4V-#(V,34U-30R-S4V-C(V,$8U-30T-#4-
M"E,Q,3,Y,S4T-S4V.#(V,#DU-30V-S4V03(V,#-#0SDS149!-C Y0T0X0PT*
M4S$Q,SDS-C0Y0S4Q0T0Y1#=$03$P,C(W0D)!,3 S,C<P,C(P1C-!-C$V#0I3
M,3$S.3,W-#(T0T0Y0S,Q-#4P,#8T0T0Y13,T-D4Y-#4P-#4P,#4P1C@-"E,Q
M,3,Y,S@T0T0Y0T)!-#4P,#0P0T0Y13,T-D5$-#4P-#4P,#4P0T0Y00T*4S$Q
M,SDS.30Y0T)!,T8Y.#-$.3@R-C$V039!-4-$.4-&-D$V,D%#1#0P#0I3,3$S
M.3-!-#E#0T9!-D4U0T0Y0T8V038R,$-$.4-#1C(P,31!-D$U13,-"E,Q,3,Y
M,T(T0T0Y0T8V038R,$-$.4-#1D$V135#1#E#1C9!-C)!0T1#,0T*4S$Q,SDS
M0S0Y0T-&0T0Y1#=$03$P-#(W,$5!,3 R,C<P-D$Q,#,R-T-%#0I3,3$S.3-$
M-# R,C!%1C,S.3@R,$)$,T0Y.#(V,3 U-38T,S4T,#4U,T4-"E,Q,3,Y,T4T
M-C8S-30R-34V.#,U-#0U-39!,S4T-CE!-#5&.#$P0T0W- T*4S$Q,SDS1C1&
M,# V.4$T-3 P,T8V1C4P-4$R049"038Q,$-$.4,S,4,S#0I3,3$S.30P-#-&
M.3A!-C-&0T0X0C@S,T8Y1$$V,#%#1#A%-3E#1#A#,D0-"E,Q,3,Y-#$T,#<R
M-3 X-$-",3DX,C=%1D-#.3(T1D(V.3@T.#0X-#@Y,@T*4S$Q,SDT,C0Y-SA#
M0C8T,$4W-3!"-C0Q13<U,4(V-#)%-S4R0C8T,SA"#0I3,3$S.30S-$4W-3-"
M-C0T13<U-$(V-#5%-S4U0C8T-D4W-39"-C0W-#@-"E,Q,3,Y-#0T13<U-S-#
M.3A"-CDX04)#04-$.4-&-D(V.3A!0C,P0T1%00T*4S$Q,SDT-30Y0T-&0C8Y
M.$$Q,#@R-S V0T,Y-#!"0T,Y,C1&039#-T8P#0I3,3$S.30V-$-$.4-&-D$V
M,S)#1#E#0T9!-C W0C<Y.#-&.41!-C Q,#8-"E,Q,3,Y-#<T0T0X134Y0T0X
M0S W,C5%,T(Q.3@R-T8P0C<Y-D(V.3A#1 T*4S$Q,SDT.#0T0T$T,#="-SDX
M0C8Y-D(Q.3@R-D0P04)#0D-$.4-&-C)%#0I3,3$S.30Y-$$V,D1#1#E#0T9"
M-CDX03$P-S(V1#%!-C W0C<Y.$$V,D$-"E,Q,3,Y-$$T0S=#1#E#1C9!-C,S
M0T0Y0T-&,T8Y1$$V,#%#1#A%-3DT-@T*4S$Q,SDT0C1#1#A#,#<R-4$V0C$Y
M.#(W1C!"-SDV0C8Y.#1#030P-S@W#0I3,3$S.31#-$(W.3A"-CDV0C$Y.#(V
M.3-!0D-"0T0Y0T8V0C8Y.$%",CD-"E,Q,3,Y-$0T,S%#1#E#0T9"-CDX03$P
M-S(V0T9!-C=&0T0X0C@S.4(Y-0T*4S$Q,SDT130T-3 P-3!#1#DU-S4T-48X
M.#!#1$8P,#8T-3 P-3A#1#%%#0I3,3$S.31&-#DU-S4T-48X.#A#1$8P,#8T
M-3 P-C!#1#DU-S4T-48X,3D-"E,Q,3,Y-3 T.3!#1$8P,#8T-3 P-CA#1#DU
M-S4T-48X.3A#1$8P,#9%- T*4S$Q,SDU,30T-3 P-S!#1#DU-S4T-48X03!#
M1$8P,#8T-3 P-SA#1#A$#0I3,3$S.34R-#DU-S4T-48X03A#1$8P,#8T-3 P
M.#!#1#DU-S4T-48X03@-"E,Q,3,Y-3,T0C!#1$8P,#8T-3 P.#A#1#DU-S4T
M-48X0CA#1$8P,#8U- T*4S$Q,SDU-#0Y04$V,3%#1#E#,S%#1#E$-T1!,3 T
M,C9&.4-$.$0R-T9##0I3,3$S.34U-$(V035#,$8X,C@T,$(W-# S1C0Q,T8T
M,C-&-#,S1C0T.$(-"E,Q,3,Y-38T,T8T-3-&-#8S1C0W.4(T-48X,CA#1$8P
M,#8Y04-#.#%"00T*4S$Q,SDU-S0V148V0C<T,$4V,#%"-S0Q138P,D(W-#)%
M-C S0C<T,T4U#0I3,3$S.34X-$4V,#1"-S0T138P-4(W-#5%-C V0C<T-D4V
M,#="-S0W,S,-"E,Q,3,Y-3DT.#$P,3 Q-#A#1#A&,3DR-C0V,T9!0D,V1C@Q
M,$-$.$8P,PT*4S$Q,SDU031%0T,V1C@Q,4-$.$9%0T,V1C@Q,D-$.$9%0T,V
M1C@Q,T,W#0I3,3$S.35"-$-$.$9%0T,V1C@Q-$-$.$9%0T,V1C@Q-4-$.$9%
M0T,V-C -"E,Q,3,Y-4,T1C@Q-D-$.$9%0T,V1C@Q-T-$.$9%0T(V04(R-S$S
M039$1@T*4S$Q,SDU1#0R,4-$.4,S,4$V,CA#1#E$-C1#0SDV-C=#0S@Q1D9#
M0S1"#0I3,3$S.35%-#@R,#9!-C!&0T0Y0S,Q0T0Y1#=$03$P,3(W14)!,3 T
M-4,-"E,Q,3,Y-48T,C<P,C(P1C,Y0C0U1CDX,$-$1C P,SE!,T8Y1$$V,41$
M-0T*4S$Q,SDV,#1#1#A%-3DX0T%%,#@U044V-#!$,48X,3 R-C(U-4$R-C,X
```

```
M#0I3,3$S.38Q-$8U,T,Y1$$V,41#1#A%-3DX0T%%,#@U044V-#!$,48X-S(-
M"E,Q,3,Y-C(T,3 R-C$P-4$R-D8U038R,D-$.4,S,4$V,CA#1#E$-C0W.0T*
M4S$Q,SDV,S1#0SDV-C<Y0C0U1CDX,$-$1C P-C-&-#!#1#A$-S0U-3E"#0I3
M,3$S.38T-$,R,S4T,4$V1D9"-S0S0C<T-$(W-#5"-S0V0C<T-S0U,#0-"E,Q
M,3,Y-C4T,#!%04-$1C P-CE!0T0X1#-&038R,T-$.4,S,4$V,CA&,0T*4S$Q
M,SDV-C1#1#E$-C1#0S@Q-D5!13$R.$-$-D9!,#!%-S4Q-4$R03DQ#0I3,3$S
M.38W-$8X0C8U,4$Q1D8R-C$P044Q,3A#038S,$4W-3$U03)!,S -"E,Q,3,Y
M-C@T1D(V131%-3@V134W-C(V13)%-34V13)&-3DV13)%-49"00T*4S$Q,SDV
M.31!-C T0T0Y0S,Q-#5!0C4V0C8V,T$Q1D8R-S S-#5!0C8U#0I3,3$S.39!
M-#4Q0T0Y0T)!0T0Y1#=$03$P-#(W,3%!,3 Q,C=%-C-$.$4-"E,Q,3,Y-D(T
M-C,R-S T,T8V,S(P1$4V149&-C,R,$0Y,T0V,S(W,#-%,0T*4S$Q,SDV0S1#
M0SDW035!-C$V0T0Y0S,Q,T8V,S9%.# U,#-&1C1!-C="#0I3,3$S.39$-#!%
M0T0Y0T8V,T8Y.$(V0C5!,3 P,C9&030U,# U,$-$0C -"E,Q,3,Y-D4T.4-"
M04)%.3@X0T0V03E%.4-$.4-&-D(V0C5!,49&,C<T,0T*4S$Q,SDV1C1&04$Q
M,#0R-S$P03$P,#(W,#A!,3 R,C<P0D$Q,#,R-S%##0I3,3$S.3<P-# W,T9&
M-#(P139#0SDW.3)!-C Q0C<Y-D(V1C0R-S!!-$0-"E,Q,3,Y-S$T03$P0C(U
M-S$S048T038P-4(W.39"-CDX03$P-C(W,T4W1@T*4S$Q,SDW,C1!,3!%,C<T
M04(V0C5!,3 S,C<Q04)%.3@X0T1%04$P-S4P#0I3,3$S.3<S-#9#-3%%-C4Q
M0D4Y.$0Q03E&.#(S-#%!-C,P1$5!03 W.4,-"E,Q,3,Y-S0T13<U,3(P,SA"
M13DX.$-$14%!,#<V034Q138U,4$Q,S T1 T*4S$Q,SDW-30R-#)!0D4Y.$0V
M03E&.$1%04$P-T4W-3$R,#%%0C8U.$0S#0I3,3$S.3<V-$$Q-$4R-S T038T
M13(P,#)!-C4S0C<U.#(P,$5"-C8R-S,-"E,Q,3,Y-S<T03$T-3(W,#1!-C0U
M,C P,D$V-3="-S8R,T-&-$$V1D9$. T*4S$Q,SDW.#1"-T(U0T,Y-D4P,T-&
M-$$V1D9"-T(U0T,Y-D5&0C9"-3(V#0I3,3$S.3<Y-$$Q,# R-D9!,T,Y.$(V
M.3A!,3!&,C9%-D$V,$-#1#E#,#<-"E,Q,3,Y-T$T1C8Y0C0U1D$P,$-$1C P
M,SE!.40Y0C0U,# U,4%$,D-%, T*4S$Q,SDW0C0T-49!,#!#1$8P,#8T-3 P
M-3E!1#(Q-#5&03 X0T1&,#)&#0I3,3$S.3=#-# V-#4P,#8Q040Q-D$V1D9"
M-S0S0C<T-$(W-#5"-S0V.$8-"E,Q,3,Y-T0T0C<T-S0U1D$Q,$-$1C P-CE!
M0T,X,39%1C9"-S0P138T.0T*4S$Q,SDW130P,4(W-#%%-C R0C<T,D4V,#-"
M-S0S138P-$(W-#1%-D4Y#0I3,3$S.3=&-# U0C<T-44V,#9"-S0V138P-T(W
M-#<X,4,V1CDP,$$Q04(-"E,Q,3,Y.# T,#,R-C S0T,Y04%!03$P,C(W,#9"
M-CA#03$S0C(V-S Y, T*4S$Q,SDX,31!-C Q0C="-D$V-49"-S4P0C9!14(W
M.3$S1CDP0T0Y1#-"#0I3,3$S.3@R-$$U0C9#0D(W-3%"-D-#0C<U,D(V049"
M-SDQ,T8Y,$-$,D4-"E,Q,3,Y.#,T.41!-4(V0T)"-S4S0C9#0T(W-31"-D(P
M0C<Y,3-&.3 T.0T*4S$Q,SDX-#1#1#E$035"-D-"0C<U-4(V0T-"-S4V0C9"
M,4(W.3$S1D8W#0I3,3$S.3@U-#DP0T0Y1$$U0C9#0D(W-3="-D-#0C<U.#-&
M-3E#-D9!13D-"E,Q,3,Y.#8T,3(R-C%!0S9&.3 P03$P,C(W,3,V130P-3 U
M1CA#138S,PT*4S$Q,SDX-S0U,T4W-3$U0T$S,#8R-D8W-D4W034W,T8U.$-$
M.4$Y,38U#0I3,3$S.3@X-#@Q0S9&.3 P03$P,S(V,#-#0SE"-$1!,3 R,C<Q
M.4(V-S8-"E,Q,3,Y.#DT.$-!,3-",C8Q,T,V1D$Q,C(V,$5!13$R.$-$-D9!
M,#!&1 T*4S$Q,SDX031%-S4P-4$R048X0T0Y03DQ.#%#-D8Y,#!!,3 S,C<Q
M-44U#0I3,3$S.3A"-$$Q,#(R-S!"0C8X0T$Q,T(R-C!"0T0Y.3 V,C P,T-$
M,C -"E,Q,3,Y.$,T.3E#1$-$.4$Y,3@Q038T,$(W,3-!-C!#0C<Q-$$V,#!$
M10T*4S$Q,SDX1#1"-S$U0S9&.3 P,C<Q-$$Q,#$R-S X03$P,C(W,#A!,3<V
M#0I3,3$S.3A%-# S,C<P,$$V,S0R,# V038S,C(P,#)!-C,S0C<Q.3@Q,C(-
M"E,Q,3,Y.$8T1C8R-S Y0C<Q.#!$,39&1$%&,#$R,$8T038P-4-$.40W,@T*
M4S$Q,SDY,#0V-#@Q038P,4(W0C9!-C8S0C<U,$-$.$,Y,$(V0T%"-S(V#0I3
M,3$S.3DQ-#4Q0C9#0D(W-3)"-D-#0C<U,T$V-S-"-S4T0T0X041&-T4-"E,Q
M,3,Y.3(T038S,$(W-35"-D-"0C<U-D(V0T-"-S4W038V-T(W-3@Q,PT*4S$Q
M,SDY,S1"-CA!0C<X14(V.$)"-SA&0T0X034T038S,$(W-3E"-D-##0I3,3$S
M.3DT-$-"0C<U04(V0T-"-S5"038W-$(W-4-#1#@Y-#1"-D-!-3@-"E,Q,3,Y
M.34T0C<U1$(V0T)"-S5%0C9#0T(W-48T-3 P-C!"-D5!,C8U,@T*4S$Q,SDY
M-C0T,$$V-3!"-S8P-35#-#,U.3!#1#A$1#1"-D-!0C<V,49%#0I3,3$S.3DW
M-$(V0T)"-S8R0C9#0T(W-C-!-C<R0C<V-$(V0S-",$4U-C@-"E,Q,3,Y.3@T
M0C<Y,4(V0S)",D4T0C<Y,#!&13DP-#-&.3 S1CDQ0T1#00T*4S$Q,SDY.30X
M1$0T0C9#04(W-C5"-D-"0C<V-D(V0T-"-S8W-#4P,#-&#0I3,3$S.3E!-#8X
M038V-48W038S,44W,#%!-C<W13<P,D$V,$1%-S S13,-"E,Q,3,Y.4(T-D8P
M-#9&,#5#-D8Y,# R-S T038P044W,#1#-D9!,3(V,0T*4S$Q,SDY0S0R-C V
M-D4U1C4P-D4R1C4T.#%!-C Q0C="-D$V-C-"-S P#0I3,3$S.3E$-#4P0T0Y
M03@X,$5%.# U038P,D-$.$,T14(V0T%"-S4Q-D4-"E,Q,3,Y.44T0C9#0D(W
M-3)"-D-#0C<U,T$V-S-"-S4T0T0Y03@X0C8Y, T*4S$Q,SDY1C1%-T$T0S R
M-C!"0C9!,T(W.$5"-D$T0C<X1D-$.$$U-$9!#0I3,3$S.4$P-$(V0T%"-S4U
M0C9#0D(W-39"-D-#0C<U-T$V-S1"-S4X-T(-"E,Q,3,Y03$T0T0Y03@X,$5%
M-C Y0C8Y14$P-D5"-SA%0T0X.$(T0C9%0PT*4S$Q,SE!,C1#04(W-3E"-D-"
M0C<U04(V0T-"-S5"-#4P,#5#0C9%045$#0I3,3$S.4$S-#(V-#!!-C4P0C<U
M0S4U0S0S-3DP0T0X1$0T0C9#04(W-D,-"E,Q,3,Y030T-41"-D-"0C<U14(V
M0T-"-S5&038W,D(W-C!"-D,S0C R0@T*4S$Q,SE!-31%-4(W.3%"-D,R0C)%
M-$(W.3 P1D4Y,#0S1CDP,T8Y,44Q#0I3,3$S.4$V-$-$.$1$-$(V0T%"-S8Q
M0C9#0D(W-C)"-D-#0C<V,S0U040-"E,Q,3,Y03<T,# V-$$V-C5&-T$V,S%%
M-S Q038W-T4W,#)!-C!$13<Q.0T*4S$Q,SE!.#0P,S9&,#0X,4$V,D1"-T-!
M0C=#0D(W0T,X,39%-3!#1#<R#0I3,3$S.4$Y-#%#,30X,3A".$-"13$V0D5#
M1$8V,C8P-#%$,30R,# T,C(-"E,Q,3,Y04$T-T4Q.$)&0T0X03@P038R,4(W
M-3!"-S4Q038R1#A#044Y1@T*4S$Q,SE!0C0Q,T4W-3(U03)!1D)"-D4W031#
M,#(V,CE"-D$S0C<Y,$4S#0I3,3$S.4%#-$(V031"-SDQ039$0D(W.3)#1#E"
M0T(S.#DT,SDY,S,Y,44-"E,Q,3,Y040T.34S.#DT,SDY,S,Y.35"-CDS0C<Y
M-$(V.35"-SDS-#4Q-0T*4S$Q,SE!130P,#4R0T0Y0D4S,$5%.#$S038S,$(W
M-39"-S4W0C<U.4,W#0I3,3$S.4%&-$(V035!-#!&.3<X0T0V.4,R,4(W-3@P
M144V,D1"-CE%,38-"E,Q,3,Y0C T03 V13)!,#$T,$%%,#DT,D)&.3-"-SDT
M0C8Y14$P-D5$0PT*4S$Q,SE",30R03 W,S Y-#1&0C(Y,T(W.3-"-CDT04(T
```

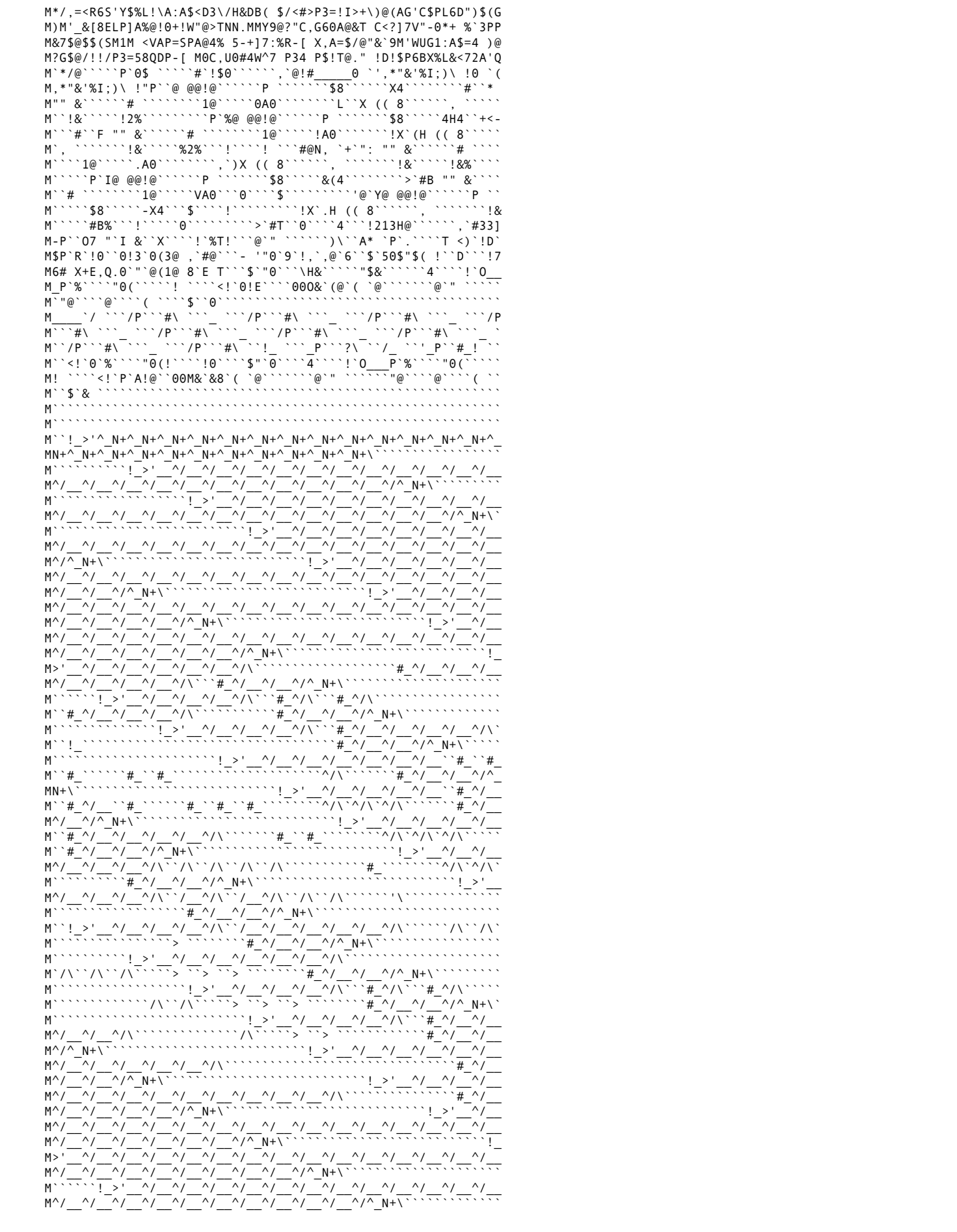
M,$(W.31"-C,T#0I3,3$S.4(R-#DS03DP,4(W.3,T-3 P-4%#1#E"13-"-D5!
M,C8Q-$(V,D,-"E,Q,3,Y0C,T0S-#,$8Y.$%"-SDT0C9#,D,R1CDX.4(W.3,T
M-3 P-44R,PT*4S$Q,SE"-#1#1#E"13,S1C8R0T0Y03DQ.#%!-C)$.$-!13%"
M13<U,#0Y#0I3,3$S.4(U-#5!,D%&0C-&.3,S1CDT-D4P,3DU0C8Y-4(Q044R
M-S$Q1C,-"E,Q,3,Y0C8T.3<X0T0V03E#,4)".31"-SDT,T,Y-3(T140S0SDS
M,C Q1@T*4S$Q,SE"-S1%.4(V041!-# S,C8P0T(V045!,3 S,C4P-C-#.30R
M-#DQ#0I3,3$S.4(X-# R,T,Y,T(V049"0CDT0C<Y-#(T,#(S0SDS-#4P,#8P
M-C,-"E,Q,3,Y0CDT0T0Y0D4S0C9",$%%,T,T,D)&.3-"0D(Q0C<Y-#(T,#)"
M,0T*4S$Q,SE"030S0SDS-#4P,#8T0T0Y0D4S0C9%03(V,$0P144Y,$$U-4,Q
M#0I3,3$S.4)"-$,T,S4Y,S0U,# V.$-$.4)%,T$V,$1"-S9#038P04(W1$,-
M"E,Q,3,Y0D,T-D0S1C9%0T0Y03DQ.#%"-CDR0D4Y,30R0C<Y-$)&.3,X- T*
M4S$Q,SE"1#1"-CDR0D4Y,#0R0D(Y,T(W.3,Y1D$Y,#!"-SDU.#$X.39&#0I3
M,3$S.4)%-#A"0C8Y,S8R030P1CA#.3=$-CE#,C$X03@X1C<X.3A"0C$-"E,Q
M,3,Y0D8T0C8Y,T$T,$8X0SDW1#8Y0S(Q.$$X.$4W,#$X.3A"0C9%-PT*4S$Q
M,SE#,#0Y-#8R030P1CA#.3=$-CE#,C$X03@X13<P,C@Y.$)"-C(X#0I3,3$S
M.4,Q-#DT030P1CA#.3=$-CE#,C$X03@X13<P,S@Q,S S,3,R,D8-"E,Q,3,Y
M0S(T,S,S-#,U,S8S-S,X,SDT,30R-#,T-#0U-#9!13(X-#(P-0T*4S$Q,SE#
M,S1!0D0W0C=&-CE&03DY1D(W1C5!-C Q0T0Y0T8V038X,#)%#0I3,3$S.4,T
M-$-$.4-&-D%$-49!-D,P0T0Y0T8V040U.#@Q044U,#0R,38-"E,Q,3,Y0S4T
M04)%1D(W1C8Y1D$Y035"-T8U038P,4-$.4-&-D$V.#!&, T*4S$Q,SE#-C1#
M1#E#1C9!1#-&039#,$-$.4-&-D%$,SA!-CDT0T0Y0S4T#0I3,3$S.4,W-$8V
M040S,4$V1#1#1#E#1C9!1#)!.#%!13 Y-#)!0CE&.30-"E,Q,3,Y0S@T0C=&
M-CE&03E!.4(W1C4U-48U1C9!1C Q,S5&-4-$.4-&1@T*4S$Q,SE#.31&-D$V
M,#A"-SDX-35&-48V048P,3,U1C5#1#E#0T8S03-$#0I3,3$S.4-!-#DX,C9&
M,C@Q038Q-$(W1C<U-48U1C9!1C Q,S5&-4%$-$,-"E,Q,3,Y0T(T,4$S048W
M,C9&,S@Q1C8X.4%$,S@X.$%&,#%&-C(W,$%&- T*4S$Q,SE#0S1"1CDW040P
M-T)%.3=!1C Q,C!&,S@Q040V-CDW0C8P-#@U#0I3,3$S.4-$-$%!1D5"-S T
M.49!-$8P04$P,D(W,# Y1#$V,# V,C8R,$,-"E,Q,3,Y0T4T,3<P,#E&-C)!
M-$8P04$P,D(W,# Y1#$V,# V,C8R,3=#1@T*4S$Q,SE#1C0P,#@Q040S1CDW
M0C8P-$%!1D5"-S T.49!-$8P04$P,#5%#0I3,3$S.40P-$(W,# Y1#$V,# V
M,C8R,3<P,#E&-C)!-$8P04$P,$(W,3 -"E,Q,3,Y1#$T,# Y1#$V,# V,C8R
M,3<P,#@Q.3="-C T04%&14(W,#0W. T*4SQ,SE,C0Y1D$T1C!!03 P0C<P
M,#$V,# V,C8R,3<P,$$V,#5#1#)%#0I3,3$S.40S-#E$-D8X,4(W.38S1D8Q
M0C8P-$$T,$9!03!%0C<P-$$V.$(-"E,Q,3,Y1#0T,#1"-S P,38P,#8R-C)"
M-C P,3<P,#$V,# V,C8R,3=". T*4S$Q,SE$-30P,$$T.# R-D4P0C9&,3(V
M,#0S0T8Q,C!$04(V.38X,3!##0I3,3$S.40V-$(W1C)!-C8T040P-3-!1C(R
M-D8X.#$U1CA#048P,38U0D(-"E,Q,3,Y1#<T,#-%.#(V1CDT03(V1C0X0S@Q
M0C9"-3(V1D-"-D(U,C<T,0T*4SQ,SE.#1&0S@Q038Q,$(W.38T1C,X.3$S
M.3DP-#E",3DR,C4P,D(W#0I3,3$S.40Y-$(P.3(S.3DT,SDY,S-!.38R-D5$
M,S,Y,S,S.31"-SDU,C0-"E,Q,3,Y1$$T.#%!-C,P0C=#04(W0T)"-T-#0C8Y
M,#(V,#9"-CDQ03$W- T*4S$Q,SE$0C0V-#(U,$5"-CDQ03 V-$(W.3$R-# R
M,T$Y,#-#0T$R,#5"#0I3,3$S.41#-$4X03$P03(U,#9!,#!!,T-#0C(P1C9!
M0C,P0C=#0S-$-D(-"E,Q,3,Y1$0T0C8R-C$T0C9#04$Q,S R-C!%038R,$(W
M0T%"-D-"03$Y1 T*4S$Q,SE$130S,#(V,#1!-C(P0C=#0C@Q038S,$(W1D-"
M-T9$0C=&134V#0I3,3$S.41&-$(V1D$R-C V0C9&0D$Q-C0R-3!%0C9&0D$P
M-C1"-T9",D8-"E,Q,3,Y13 T,C0P,C-!1D$S0T9#,C!%.$$Q,$$R-3 V03 P
M03-#1D1&-PT*4S$Q,SE%,30R,$8V04(S,$(W1D5#-C Q,# R-C$T0C9&0T$Q
M,S R-D5!#0I3,3$S.44R-#!%038R,$(W1D-"-D9$03$S,#(V,#1!-C(P0C=&
M1#@Q1D$-"E,Q,3,Y13,T1C9!1C Q.$(X.30U,# U,4%$-34X.#A!1C9!1C Q
M.$(X-0T*4S$Q,SE%-#0X.30U,# U,T%$-#DX.#A!1C9!1C Q.$(X.30U,# U
M-3A$#0I3,3$S.44U-$%$,T0X.#A!1C9!1C Q.$(X.30U,# U-T%$,S$X.#A!
M0C@-"E,Q,3,Y138T1C9!1C Q.$(X.30U,# U.4%$,C4X.#A!1C9!1C Q.$(W
M1 T*4S$Q,SE%-S0X.30U,# U0D%$,3DX.#A!1C9!1C Q.$(X.30U,# U1#=$
M#0I3,3$S.44X-$%$,$0X.#A!1C9!1C Q-#4P,#5&040P,S-&-C$X,3@W-4,-
M"E,Q,3,Y13DT-C)!-#!&04(S,$$Q,SDR,S R04(P-T8W.#9!-#!&04(S10T*
M4S$Q,SE%030S,$$Q,SDR,S R04(P-T4W,#$X,3-&.41!-C T0T0X13=&#0I3
M,3$S.45"-#4Y,T0T,#(V,#-#0SE&-D4T-3 P-#!#1#A%1D9#1#A&.#<-"E,Q
M,3,Y14,T1$-!-D8P0T0X1C4T038P,$-$.$8U-$$V,#)#1#A&-31"00T*4S$Q
M,SE%1#1#1#A&-C="-S4V0T0X1C8W0C<U-4-$.$8V-T(W-31#1#0P#0I3,3$S
M.45%-#A&-C="-S4S0T0X1C8W0C<U,D-$.$8V-T(W-3%#1#A&-S<-"E,Q,3,Y
M148T-C="-S4P0C8U-4$T,3 R-S<R,T9!1#9%,#%!139%,#$Q0PT*4S$Q,SE&
M,#1!1C-&0C S1D(Q,T9",C0U04(W1D-$.48W,#(U-4(T-4)!#0I3,3$S.48Q
M-$%"-S="-D%$030P,S(V,#,T-4%"-T)#1#E&-S R-3 T-S0-"E,Q,3,Y1C(T
M,T-!1#(P14)#1#@U-4%!,#%#-#@T.$%"-C<Y-T$V04(T,PT*4S$Q,SE&,S1!
M.3 P.#<X04-$.48W,#(U,#0S0T%%,C!%-S0U04(V,S$V#0I3,3$S.48T-$-$
M.48W,#(U,#0S0T%&,C!&-#0U04(U1D-$.48W,#(U0C4-"E,Q,3,Y1C4T,#0S
M0T(P,C!&-#0U04(U0D-$.48W,#(U,#0S0T(Q,C Y. T*4S$Q,SE&-C1&-$(V
M-3-"-T(R038P,31$,C P,31&.#%"-C4P1C$R-3@R#0I3,3$S.48W-#)&,C(Q
M-D(V-3%%,3 Q,C4R-S(R,$5"-C4R13$P,C(U1D0-"E,Q,3,Y1C@T,48R,C V
M0C8U,T4Q,#,R-3$W0C8U,T4P,#-"-S4S0C9!1 T*4S$Q,SE&.30U,D4R,#)"
M-S4R0C8U,44R,#%"-S4Q0C8U,$8R0C<U,#@Y#0I3,3$S.49!-#@Q-#4P,#0P
M0T0X149&0T0X1D1#039&,$-$.$8U-$(V,34-"E,Q,3,Y1D(T14(V,C0X031%
M,$-$.$8U-$(V14(T-#0T-#1#1#A&-31",PT*4S$Q,SE&0S0T-3 P-3 X0C@Y
M0T0X1C8W.#@X048W048P,38U,# W,#A&#0I3,3$S.49$-#(V1C$X,30V-D8W
M,C(P-S,V-39#-C4V,S<T-CDV1C9%1#0-"E,Q,3,Y1D4T-S,S03(P,C R,#(P
M,C U-3)&-#0S1#8S-C@V,39%-C<Q-@T*4S$Q,SE&1C0V-3)#,C W,S8U-D,S
M1#9%-C4W.#<T-3<T,34R-$4T.44W#0I3,3$S03 P-#1%-#<R,3(P-$0W-3<S
M-S0R,#8X-C$W-C8U,C R,#<S-3(-"E,Q,3-!,#$T-C4V13<S-D8W,C(P-C$V
M,S8S-C4W,S<S,C R.#<W-C$U1@T*4S$Q,T$P,C0V.3<T,CDR,#(P,C R,#0Y

```
M-D4R,#9$-C4V1#9&-S(W.3,R#0I3,3$S03 S-#(P-D8V-C-!,C R,#(P-#0W
M,C)%,C T1#9&-S(V-S8Q.$8-"E,Q,3-!,#0T-D4R,#,Q,SDS,C,S,D0S,3,Y
M,SDS.30U-S(W,C9&-S(Y. T*4S$Q,T$P-30R,#<R-C4V,38T-CDV138W,C S
M,3)$-S<V.3<R-C4V-#8U#0I3,3$S03 V-#8Q-S0V,3(Q,C R,#(P,C R,#(P
M,C R,#(P,C R,#(P,3$-"E,Q,3-!,#<T,C R,#(P-3 V1C<S-CDW-#8Y-D8V
M13(P-3,W-#<R-CDV,0T*4S$Q,T$P.#0V138W,T$R,#)$,D0R1#4U-S R1C0T
M-D8W-S9%,D,R,#-!#0I3,3$S03 Y-#4S-C4V0S-$-$4V-3<X-S0R,#(P,C T
M-#8Y-S,W,#9#-4,-"E,Q,3-!,$$T-C$W.3(P-#,W-3<R-S(V-39%-S0R,#0T
M-C$W-#8Q,C@P.0T*4S$Q,T$P0C0U,S4W,C U,C8U-S8R,#,Q,D4S,3,P,D4S
M,34S,CDR,$,V#0I3,3$S03!#-#(P,C R,#4S-C4W-#(P-4$W-39#-S4R,#0T
M-C$W-#8U.$4-"E,Q,3-!,$0T,D8U-#8Y-D0V-3(P,C R,#(P,C R,#(P,C R
M,#(P,C U00T*4S$Q,T$P130R,#(P,C R,#(P,C R,#(P,C R,#(P-34T,34R
M-30R1CE$#0I3,3$S03!&-#0T-CDW,S<P-D,V,3<Y,C V1C<P-S0V.39&-D4W
M,S(P,S8-"E,Q,3-!,3 T,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P
M,C T-PT*4S$Q,T$Q,30R,#(P,C U-S8Y-D4V-#(P-C$V138T,C U-#8U-D0W
M,#-##0I3,3$S03$R-#8U-S(V,3<T-S4W,C8U-3,V-39%-S,V1C<R,C U,S8U
M1$0-"E,Q,3-!,3,T-S0W-3<P,C R,#(P,C R,#(P,C R,#4R-C$V.39%,C Q
M- T*4S$Q,T$Q-#0T-S<U-C$V-S8U,C U,S8U-S0W-3<P,C R,#(P,C R,#1$
M#0I3,3$S03$U-#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P1C<-
M"E,Q,3-!,38T,C R,#(P-3 V1C<S-CDW-#8Y-D8V13(P-3,W-#<R-CDW, T*
M4S$Q,T$Q-S0V138W,C R,#(P,C R,#4S-C4W-#<U-S R,#(P,C R,$0Q#0I3
M,3$S03$X-#(P,C R,#(P,C R,#(P,C R,#(P,C U,S8U-D,V-38S-T(-"E,Q
M,3-!,3DT-S0R,#0Y-D4W-#8U-S(V-C8Q-C,V-3-!,C R,#(P,S5#,PT*4S$Q
M,T$Q030R1#9$-CDV13(P-C$W-C8W,C R.#4T-$4T,S)$-C0V.4(Q#0I3,3$S
M03%"-#<R,CDR,#4S-C4V0S8U-C,W-#(P-#DV13<T-C4W,C8V1C0-"E,Q,3-!
M,4,T-C$V,S8U,T$R,#(P,C S-3)$-D0V.39%,C V,3<V-C=#, T*4S$Q,T$Q
M1#0R,#(X-30T130S,D0T0S4T-3 R.3(P-3,V-39#-C4V,T8X#0I3,3$S03%%
M-#<T,C T.39%-S0V-3<R-C8V,38S-C4S03(P,C R,#,U-S,-"E,Q,3-!,48T
M,D0W,S8U-C,R,#9#-CDW-C8U,C R.#0S-D8V1#<P-S5$,PT*4S$Q,T$R,#0W
M-#8U-S(U,S8U-D,V-38S-S0R,#0Y-D4W-#8U-S(V-C$S#0I3,3$S03(Q-#8Q
M-C,V-3-!,C R,#(P,S4R1#<S-C4V,S(P-D,V.3<V-D(-"E,Q,3-!,C(T-C4R
M,#(X-3 V-38U-S0R.3(P,C R,#1&-$(R,#<T-D9#-0T*4S$Q,T$R,S0R,#0S
M-D8V13<T-CDV13<U-C4S1C(P,C R,#(P,C U,S=&#0I3,3$S03(T-#8U-D,V
M-38S-S0S1#8W-D8R0S(P-$0V-39%-S4S1#8U-C,-"E,Q,3-!,C4T-S@V.3<T
M-3(V1C<T-C$W-#8U,C T,S9#-D8V,S9"-S=!1@T*4S$Q,T$R-C0V.3<S-C4R
M,#(P,C R,#<S-D,V1C<W-D,W.3(P,S$R1D9"#0I3,3$S03(W-#,S,C R1#)$
M,D0R1#)$,D0R1#)$,C U,#9&-CDV13<T1C$-"E,Q,3-!,C@T,C W-#9&,C U
M-#<R-S4V-3(P-$4V1C<R-S0V.#(P-S0T- T*4S$Q,T$R.30V.#8U-D4R,#<P
M-S(V-3<S-S,R,#4S-C4V0S8U-C,W-$%%#0I3,3$S03)!-#(P,C R,#4S-C4W
M-#-!,C R,#<X-S@R1C<X-S@R1C<X14$-"E,Q,3-!,D(T-S@R,#<X-S@S03<X
M-S@R.#<S-C4V0S8U-C,W-#-$-D4Y,0T*4S$Q,T$R0S0V-3<X-S0R.3(P,C R
M,#(P,C R,#(P-$8V138U,C V1#=$#0I3,3$S03)$-#9&-D0V-39%-S0R,#<P
M-D,V-38Q-S,V-3)%,D4R13(P,$8-"E,Q,3-!,D4T,C R,#(P,C R,#(P,C R
M,#(P,C R,#(P,C R,#(P,C V-@T*4S$Q,T$R1C0R,#(P,C U,S8U-S0R,#1#
M-D8V,S8Q-D,R,#8X-D8W-34S#0I3,3$S03,P-#<R,C W.#<X,C R,#(P,C@U
M,S8U-D,V-38S-S0S1#8T,T$-"E,Q,3-!,S$T-D8V138U,CDR,#(P,C R,#(P
M,C R,#9$-D0R1C8T-C0Q.0T*4S$Q,T$S,C0R1C<Y-SDR,#8X-C@S039$-D0U
M03(P-C@V.#1#,C U,T8W#0I3,3$S03,S-#8Q-D0W,#9#-C4R,#<X-S@R1C,V
M,S R,#(P,C R,#(P0S$-"E,Q,3-!,S0T,C R,#(P,D0R1#)$,D0R13)$,D0R
M,3)&,D0R1#)$,D0V-0T*4S$Q,T$S-30R1#)%,D0R1#(Q,C R,#4U-S R1C0T
M-D8W-S9%,D,R,# W#0I3,3$S03,V-#4S-C4V0S-$-$4V-3<X-S0R,#(P,C U
M,S8U-D,V-38S.3D-"E,Q,3-!,S<T-S0R,#4U-D4V.3<T-S,S03(P,C R,#(P
M,C R,#(P-$1#-PT*4S$Q,T$S.#0V-3<T-S(V.38S,C R,#(P,C R,#(P,C R
M,#(P,C R,#1%#0I3,3$S03,Y-#(P,C R,#4S-C4V0S8U-C,W-#(P-34V138Y
M-S0W,S-!.#@-"E,Q,3-!,T$T,C R,#(P,C R,#(P,C T-39%-C<V0S8Y-S,V
M.#(P,C!"0@T*4S$Q,T$S0C0R,#(P,C R,#(P,C R,#(P,C R,#(P-3,V-3<T
M-S0V.3)##0I3,3$S03-#-#9%-C<R,#<U-S R,#4T-$4T,S)%,D4R13(P,C R
M,#(P.4,-"E,Q,3-!,T0T,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P
M,C W-0T*4S$Q,T$S130R,#(P,C S,3)$-3<V.3<R-C4R,#0R-S4W,S(P-#4W
M,D5&#0I3,3$S03-&-#<R-D8W,C(Q,C R,#(P-#(W-3<S,C W,S8X-D8W,C<T
M,#<-"E,Q,3-!-# T-C4V-#(P-S0V1C(P-#<T130T,C R,#,Q,D0U-S8Y-S)!
M1@T*4S$Q,T$T,30V-3(P-#(W-3<S,C T-3<R-S(V1C<R,C$R,#(P,C T13A#
M#0I3,3$S030R-#9&,C T-#8U-S8V.38S-C4W,S(P-S(V-3<S-S V1C9%,4(-
M"E,Q,3-!-#,T-C0R13(P-3<V.39%-C0R,#0T-CDW,C8U-C,W-#8Y-D8W1 T*
M4S$Q,T$T-#0V13(P-S0V-3<X-S0S031%-S4V1#8U-S(V.38S,C V-#(P#0I3
M,3$S030U-#8U-C<W,C8U-C4W,S(P,C R,#(P,C U-S8Y-D4V-#(P,C<-"E,Q
M,3-!-#8T-#0V.3<R-C4V,S<T-CDV1C9%,C W-#8U-S@W-#-!-#-%,0T*4S$Q
M,T$T-S0V1C9$-S V,3<S-S,R,#(X-#4R0S(P-$4R0S(P-C4W-$8U#0I3,3$S
M030X-#8S,D4R.31%-D8R,#0Y-#0W,S(P-S W,C9&-C<W,C8Q.#(-"E,Q,3-!
M-#DT-D0V1#8U-C0R13(P,C U,#9#-C4V,3<S-C4R,#<R-S4T,@T*4S$Q,T$T
M030V13(P-3,T-34T-34U,#)%,C R,#(P-30W-S9&,C W-#(Y#0I3,3$S031"
M-#8U-D0W,#(P-S,V-39%-S,V1C<R-S,R,3(P,C R,#4P-30-"E,Q,3-!-$,T
M-CDV,S9",C V1C<U-S0W,S8Y-C0V-3(P-S,V-39%-S,U-PT*4S$Q,T$T1#0V
M1C<R,C U-39%-S V0S<U-C<R,#<R-C$V.39%,C V-T$W#0I3,3$S031%-#<U
M-C$V-S8U,D4R,#(P-3,V-39#,T0V-S9&,D,R,#1$.#0-"E,Q,3-!-$8T-C4V
M13<U,T0V-3<X-CDW-#)%,C R,#4P-D,V-38Q-S-",@T*4S$Q,T$U,#0V-3(P
M-S,V-3<T-S4W,#(P-S<V.39%-C0R1C(P,C W-$0X#0I3,3$S034Q-#8U-D0W
M,#8U-S(V,3<T-S4W,C8U,C V-C8Y-S(W,S<T0C$-"E,Q,3-!-3(T,D4R,#(P
M-$4V1C(P-S(V,38Y-D4R,#<S-C4V13<S-D9%-@T*4S$Q,T$U,S0W,C(P,C R
```

M,#(P,C R,#8V-D8W-39%-C0R,3(P,C R,#0T#0I3,3$S034T-#(P,C R,#(P
M,C R,#(P,C R,#(P,C U,C8Q-CDV13(P1CD-"E,Q,3-!-34T-S,V-39%-S,V
M1C<R,C T.30T,C V-C9&-S4V138T-#,R1 T*4SQ,TU-C0W-39$-S4V0S8Q
M-S0V.3<V-C4R,#4R-C4V-C(P-3(V-48S#0I3,3$S034W-#<S-C4W-#4P-CDV
M,S9",C T.30T,C V-C9&-S(R,#<T-3@-"E,Q,3-!-3@T-C@V-3(P-S<V.39%
M-C0W,S<P-C4V-38T,C W,S8U-D5!1 T*4SQ,TU.30W,S9&-S(R13(P,C R
M,#(P,C R,#(P-#0U,S,Q,SDS.3$W#0I3,3$S035!-#,T,C V-C9&-S4V138T
M,D,R,#<T-CDV1#8U,C R,#<S.#4-"E,Q,3-!-4(T-C4W-#(P-S0V1C(P-#0U
M,S,Q,SDS.3,T,C V,S9#-D9#0@T*4SQ,TU0S0V,S9",D4U,C8Q-CDV13(P
M-#<W-38Q-C<V-3(P-D0V.49%#0I3,3$S035$-#<S-S,V.39%-C<R,3(P-3<V
M.39#-D,R,#8Y-C<V139&03D-"E,Q,3-!-44T-S(V-3(P-S,V-39%-S,V1C<R
M,D4R,#(P-3<V.39#-D-#0PT*4SQ,TU1C0R,#8Q-D4V-#(P-3(W-3<S-S,R
M-S<S,C R,#(P,C R,$8Y#0I3,3$S038P-#0Q-3 U,C4S,C U-S<X,C U,S<T
M-C$W-#8Y-D8V13(P1D(-"E,Q,3-!-C$T,C R,#(P,C R.#8S,CDR,#0S-D8W
M,#<Y-S(V.38W-C@Y.0T*4SQ,TV,C0W-#(P,S(S,#,P,S R,#(P-#,T1#0Y
M,C U,#<R-D8V-$9%#0I3,3$S038S-#<U-C,W-#8Y-D8V13<S,C R,#(P,C R
M,#(P,C R,#(P140-"E,Q,3-!-C0T-#,W-3<R-S(V-39%-S0V0S<Y,C R,#(P
M,C R,#(P-30R-@T*4SQ,TV-30V-39$-S R,#)$,D0R1# P-#8R,#1#,D0R
M1#)$,C T.#8X#0I3,3$S038V-#)$,D0R1#4W-CDV138T,C R1#)$,D0P,#(P
M,D0R1#1$-4(-"E,Q,3-!-C<T-3 T.#(P-#<R,#)$,D0U,C8Q-CDV13(P,D0R
M13)$,D1&00T*4S$Q,T$V.#0R,C(P-30V1C8T-SDR,#0W,C R1#)$,C R,#(P
M,C R,#5&#0I3,3$S038Y-#4Y-C4W,S<T-C4W,C8T-C$W.3(P,C R,#(P,C R
M,#4T130-"E,Q,3-!-D$T-C4V1#<P,C T0S)$,D0R1# P-#8R,#0X,D0R1#)$
M,# S. T*4SQ,TV0C0T-C(P,C U-S8Y-D4V-#(P-#<W-3<S-S0R,#)$,D0R
M,#%$#0I3,3$S039#-#1$-3 T.#(P,C R,#(P-3(V,38Y-D4R,#)$,D4R1#)$
M0D4-"E,Q,3-!-D0T,C(R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C W
M, T*4SQ,TV130R,#(P,C U,C8Q-CDV13(P,C R,#(P,C R,#(P,C U-#(T
M#0I3,3$S039&-#9&-C0V,3<Y,C R1#)%,D0R1#(P-3DV-3<S-S0R,#)$0D4-
M"E,Q,3-!-S T,D4R1#)$-$0V1C9%-S0V.#(P,D0R13)$,D0R,#4U-S-&-@T*
M4SQ,TW,30V-3<R,C R1#)%,D0R1#0X-D8W-3<R,C R,#)$,D4R1#%&#0I3
M,3$S03<R-#)$,C R,#(P,C R,#(P,C R,#(P,C R,#(P,C R,#(P,30-"E,Q
M,3-!-S,T,C R,#4S-S0V,3<T-S4W,S(P,C R,#(P,C R,#(P-D0P, T*4S$Q
M,T$W-#0V1#)&-C0V-#)&-SDW.3(P-C@V.#-!-D0V1#(P-4$W-3@Y#0I3,3$S
M03<U-#9#-S4R,#8X-C@S039$-D0R,#1#-D8V,S8Q-D,R,#<T-D0-"E,Q,3-!
M-S8T-CDV1#8U,C R,#(P,C U,S8Q-D0W,#9#-C4S03(P-SA&,@T*4SQ,TW
M-S0W.#)&,S8S,#(P,C R,#(P,C R,#(P,C R,#(P-#4W,D-$#0I3,3$S03<X
M-#<R-D8W,C(P-#,V1C<U-D4W-#8U-S(W,S(P,C R,#4T-#<-"E,Q,3-!-SDT
M-C4V1#<P,C W.#<X-S@R,#4R-C$V.39%,C W.#<X-SA"-0T*4S$Q,T$W030R
M,#(P,C U-S<S-S V-#(P-S@W.#<X,C U-S8T-CDW,C8U#0I3,3$S03="-#(P
M-S@W.#<X,C R,#(P,C R,#(P,C R,#(P,C R,#(P.#D-"E,Q,3-!-T,T,C R
M,#(P,C R,#(P,C R,#(P,C R,#(P,C X,0T*4SQ,TW1#0T,S<U
M-S(W,C8U-D4W-#9#-SDR,#(P,C R,#(P,C U-#DU#0I3,3$S03=%-#8U-D0W
M,#(P,D0R1#)$,# T,S(P-$,R1#)$,D0R,#0X1$$-"E,Q,3-!-T8T,D0R1#)$
M-3<V.39%-C0R,#)$,D0R1# P,C R1#)$-$)#0PT*4S$Q,T$X,#0U,#0X,C T
M-S(P,D0R1#4R-C$V.39%,C R1#)$,D4R1#8X#0I3,3$S03@Q-# Q,C U-#9&
M-C0W.3(P-#<R,#)$,D0R,#(P,C R,#(P144-"E,Q,3-!.#(T-3DV-3<S-S0V
M-3<R-C0V,3<Y,C R,#(P,C R,#(P-30U,@T*4SQ,TX,S0V-39$-S R,#1#
M,D0R1#)$,# T,S(P-#@R1#)$,D0P,$$Y#0I3,3$S03@T-#0S,C R,#4W-CDV
M138T,C T-S<U-S,W-#(P,D0R1#(P.$4-"E,Q,3-!.#4T-$0U,#0X,C R,#(P
M,C U,C8Q-CDV13(P,D0R1#)%,D0R0PT*4SQ,TX-C0P,3(P,C R,#(P,C R
M,#(P,C R,#(P,C R,#(P,C R,$9&#0I3,3$S03@W-#(P,C R,#(P,C R,#(P
M,C R,#(P,C R,#(P,C R,#(P1# -"E,Q,3-!.#@T,C R,#(P,C R,#(P,C R
M,#(P,C R,#(P,C R,#(P,C!#, T*4SQ,TX.30R,#(P,C R,#(P,C R,#(P
M,C R,#(P,C R,#(P,C R,$(P#0I3,3$S03A!-#(P,C R,#(P,C R,#(P,C R
M,#(P,C R,#(P,C R,#(P03 -"E,Q,3-!.$(T,C R,#(P,C R,#(P,C R,#(P
M,C R,#4W-S,W,#8T,C W,@T*4SQ,TX0S0V,39%-C0R,#4R-C$V.39%,C W
M,S8U-D4W,S9&-S(V-C@S#0I3,3$S03A$-#9&-S4V138T,D,R,#9%-C4V-38T
M,C V.#8U-D,W,#)%1$(-"E,Q,3-!.$4T,C R,#(P-S4W,#-$-S4V13<P-D,W
M-38W,C W,C8Q-CE%-PT*4SQ,TX1C0V13(P-C<W-38Q-C<V-38T-D8W-S9%
M,T0W,#8Y-C,V0C%$#0I3,3$S03DP-#(P-#DT-#<S,D4R,#(P,C R,#(P,C R
M,#(P,S R,#,R-D8-"E,Q,3-!.3$T,S,R,#,T,S4R,#,V,S@R,#,Y,S S,3,Q
M,S,S,3,S,S4R10T*4SQ,TY,C0S,3,U,S@S,3,X,S S,C,P,S,S,C,R,S4S
M,C,T,S@S,D5!#0I3,3$S03DS-#,W,S S,C,Y,S,S,S,Q,S4S,S,S,S@R,#(P
M-$4T131%03D-"E,Q,3-!.30T-#4R,#1%-#4T-31%-#4R,#(P-#4T-34S-#4R
M,#4S-#4Q-0T*4SQ,TY-30U,S4S-#4R,#(P-3,U,S4S-3<R,#4S-3<U-S4S
M-3<R,#@Y#0I3,3$S03DV-#(P-3<U-S1%-3<R,#1%-3<T131%-3<S,#,P,S S
M,#,R0S(-"E,Q,3-!.3<T,S,S,#,T,S4S,#,V,S@S,#,Y,S S,3,Q,S,S,3,S
M,S4Y10T*4SQ,TY.#0S,3,U,S@S,3,X,S S,C,P,S,S,C,R,S4S,C,T,S@S
M,CA!#0I3,3$S03DY-#,W,S S,C,Y,S,S,S,Q,S4S,S,S,S@T,#!#,3(Q,C!#
M1C<-"E,Q,3-!.4$T,# P,# P,# T.#!!,34Q-3 P,$$Q-3$U,# P,# P,#!%
M1@T*4SQ,TY0C0P,# P,# P,# Q,# P,# P,#0P,# S,#(P,#%&,4,Q1C)"
M#0I3,3$S03E#-#%%,48Q13%&,48Q13%&,44Q1C Q,#(P,# S,#0P-S8S1C@-
M"E,Q,3-!.40T,$,Q1C$W,T(P,# P,3<P,# Q,#$P,# P,# P,# P.#<U,@T*
M4SQ,TY130X03A$.3 Y,SDP.# X,3@R.#,X-3@V.#<X.3A!.$(X0T0S#0I3
M,3$S03E&-#A$.$8Y,#DQ,SDS.3,U,SDS.3,Y-3,S,3,Y,SDS-3,Y-4,-"E,Q
M,3-!03 T,SDS.34W,# P,3 R,#,P-3 V,#<P.3!!,$(P0S!$,$8Q-PT*4S$Q
M,T%!,30Q,#$Q,# U14)#13(V,3-&1$0X,T,R.4,W13(P03-&1#<U#0I3,3$S
M04$R-#%&-#$Y1$,S,C$W1D9#03(T,#%%-48P,44S0D0S138P,C0-"E,Q,3-!
M03,T.#)$0S(S-T0Y1D,Q-#(Q0T9%03!%,4)&-40P,S@P1$4U-@T*4S$Q,T%!

```
M-#0S0S8R0D5%,# R-4-$1C@Q-C,S1#=#,C)#,#E%,40T,S X#0I3,3$S04$U
M-$$Q1D8T-C$X1D%!-#(W-SDY0D,U.#1$03,X-C9%-4)"0C8-"E,Q,3-!038T
M-3DP-T1".#4V-S,Y0D%%-# V-3@Q.30W035&0C<X,C9%- T*4S$Q,T%!-S1#
M-#E!-C4S0D0Y.#<P-#5!0CA%-D$W1CDQ0C0U0S8Y.#$V#0I3,3$S04$X-#=!
M,C1&.$$V-#0Q03DY0S<R-3=",T$V-#@V1#@U0C U0S@-"E,Q,3-!03DT13="
M.3A#1#(S,#9%141",S4Q,$8T13$P1C)!0S)&-S$W-@T*4S$Q,T%!030Y,T-$
M,3$T1D%$1C,W,#)%0T,Y,D0S.$0V1C,Q0C)%0T$T#0I3,3$S04%"-#!%-3!!
M1D8Q,3,T1$-%.3 W,C)#-D0S,T0Q.$8P0S4R1#8-"E,Q,3-!04,T0C!%13,R
M-D,X140P-3,P1$5&0C%&,$%%-$,Q,CDQ0T8X. T*4S$Q,T%!1#0R1#<S0T$Y
M-#<V,CA!0D8U,3<T.3 X-39"-$5!-CDS-S,V#0I3,3$S04%%-$0U.$(U-S Y
M14)"-3,V-C@X040T.35#0C(Y-S=&-$%!-C0-"E,Q,3-!048T-#@Q-D4Y0C<U
M-3!".#A$-C,T-D$R0C<U.3=#.31!,30Y-@T*4S$Q,T%",#1&-D$X-S0R04,X
M.38Q-31"03E&-T(V13@P034T1#<X.30W#0I3,3$S04(Q-#9",S4P1# P,#,P
M,#8U-C,V.#9&,C V1C8V-C8P1# P-S8-"E,Q,3-!0C(T-D0V1C9%-CDW-#9&
M-S(R,#9&-C8V-C!$,# V,S9&-D4V1 T*4S$Q,T%",S0W-C8U-S(W,S!$,# U
M-S<X,C U,S<T-C$W,C<T,C R.$9"#0I3,3$S04(T-#,Q,D4S,3,P,D4S,34S
M,CDR13)%,D4P1# P.3$V1C9%-40-"E,Q,3-!0C4T,C P,#DQ-D8V-C8V,# P
M,# P,# S0S P,# P13$P,#!!-PT*4S$Q,T%"-C0P,34Q.# P,#(T14$P,# P
M,C8S0C@P,# R-SA$,# P,#8X#0I3,3$R04(W-#(X1$4X,# Q13$S,S@P,#%%
=,C@U,# S.#9$-#,X,$4S#0I3.3 S,# P,$9##0HX
`
end

begin 600 WINMAIL.DAT
M>)\^(BL"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`\````4D4Z(%MW>'-I
M9UT@059!24Q!0DE,2519($]&($U/1$E&245$(%0R,S@@0T]$12!&3U(@2U!#
M,RL@3$8`[0\!!8 #``X```#0!PD`&0`3`#(`( `!`%\!`2" `P`.````T <)
M`!D`$P`L`"\``0!H`0$)@ $`(0```#$T1C(X,D,W,3DY,T0T,3%!.#4V,# P
M,$4X.4(S0S Y`.P&`0.0!@!L"0``(@````L``@`!````"P`C```````#`"8`
M``````L`*0```````P`N```````#`#8``````$ `.0! SO<G7"? `1X`< `!
M````/ ```%)%.B!;=WAS:6==($%604E,04))3$E462!/1B!-3T1)1DE%1"!4
M,C,X($-/1$4@1D]2($M00S,K($Q&``(!<0`!````%@````' )UPG\,>"\A63
M&1'4J%8``.B;/ D``!X`'@P!````!0```%--5% `````'@`?# $````0````
M=VEL;$!B96%L<S4N8V]M``,`!A!X2:T_`P``$'(%```>``@0`0```&4```!*
M3TA..DE42$]51TA424A!1%)%3$5!4T5$5$A!5$-/1$4L0E543$]/2TE.1T)!
M0TM!5$U94D5,14%314Y/5$53251705-*55-4051%4U1#55142$5415-40U54
M3TY,64%$1%-4``````(!"1 !````$08```T&``!O"0``3%I&=5O#R/X_``H!
M`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R
M-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V! ;F<Q,#,S"Z8@X$IO:&XZ
M"J(*A J D$D@=&@(8&=H!4 3& `/<&0@"7!L96%W#Z 8X!@@805 !: !`"Q8
M(&)U!4 )`&\4L6>3&C `T&L@&;%M>1CV4"!N;W0'D6D%0'>A&4 @:G5S!4!A
M&! '!Y 9P1I0+B @5&AK'! ==B "(&P;D!C09*<$(!@@'!!,1A@0;Q^#^$%0
M4@7P!&(:(!PQ'X,>4 G@&V$9]Q@`86T@ZQ$P#[!T&Y!S"' >01FB<00`($]+
M'?$BFQS ;59P&6,C\7<)X&L:('.7(! 8``/P; ,@<&\=(>\?DAYI'X,F`&(`
MD!Q0'_+^9R'!`' ;D N '% )<!T@FQEA"K%T") $(&=O&L&?)$(CTPM@`F 9
M83$N%B )+%!3+A=*7&]B:L$9L'1P:%PG# $74X<FLBS+"P-L:3,V`4!/%: N
M00-@'%!C=!!T,:@V("TQLD\%$&<+@.<'0 70!Y!S82E ,;,71@\PQ"Y#"S$P
MQFDM,33&- % ,! Q.# !0 S0<3538B!&`XV$7, R28I4/T&HJ(78)\'- %Q ,
M<RX%H"+ 6U--5/10.C=^71=%-H &8 (PQ3;G30(@9&%Y&B &8.T%,&4&T 20
M(!/P&B !T*,UX#Q@.C0Y(9!-.?<45&\VYU0@<2!76#L&`"5P8P<Q&) IU2!'
MZ0-@=7 Y^'4MH##Q-N=(6W=X`)!G70_@5B!!24Q!0D+0250&6200'^!-3T1)
M1@A)140>$#(S." J0T.P13:03S[@2U#X0S,K'\$S7S1J,!0+MN\74PKC+SH*
M@%<FPA^2&>+3(+(&D&EC&;!I`B ?<3\@$ N #Z `(!^#"7!Q==)I"7$@(A_0
M(AG0#W%[`- IX2 "$ 7 11,71&^?)7!-<$LB&C <$&%V"W#'*],IL1^#;F5X
M!4 9!?H_&)!F'"(:($L``Z 8`.LI0QG1<!N0;U&@'Y$71-=*I!EA2E,H.$%P
M`Q )@'XI'_()`!C14$$;<D0R/^\73"*P!" =P'()< (P'Q'?'1 :PA^2110@
MD"U$0!%@OTO1/W(G`$OR2Y(IX68`T+\C@AP01#(B-2Y5"&!L&."=,!!K*/,=
M$%M41U %\/]:4T[03R,H)4UP2L @$%I2OR9#&9,8`%(2"7 %H&Y0L'\Q`1=3
M'Y)9?UJ#&X$@<B_T4T$AD$,LNQ;R!@`WE$$71$LY05I:2*\*UCY!)@?P16AP
M4 -@*_%_5Z$#\!@@1"0`<!C@111V\" X+C->%V>5-J,6XP@@5F%=HCQJ9'96
M0#(@"0!U.#(^9Y5$+1FP96AP-J!I&B P,0,[PCRD,3$Z-30Z-# W,: P-7 N
M13Y8\BTREDYU/")H<!4S9]%?9Y4>(!FQ',(<D"$K82>O)>$%L!JS'#!W++4^
M(I%^<"5P%- 981U03/,@!53P3D,M3#BP&W RI$W2?P# *6(+,6>S83)4]!WP
M3O]TX%C)(_$`T%M 7L%8I40S/SN `9 H%EXF=09RR&YK^S@@?7PW%E!R:TG"
M!S BP/I"&3!L)>$PPA<U;>86ZO^"1RMQ=:(/@1F$'Y-W8DIB_2/Q=0,`3(!0
M)2/"4.),@WMZT41P4G= '^*"5BGA;?\R02CB'C$=( 40&M$%H6$Q_U@R2[$<
M4!C14R0@L2-Q'##_>#$#((?A'O(D0P# `0""5OT=4',_11ZR3>(F8 > `B#_
```



```
M`````````````!_>'__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__
M^/__^/__^/__^/__^/__^/__^/]_>'\`````````````````````````````
M`````````````````````!_>'__^/__^/__^/__^/__^/__^/__^/__^/__
M^/__^/__^/__^/__^/__^/__^/__^/]_>'__^/__^/^_N+]_>'\`
M`````````````````````````!_>'__^/__^/__^/__^/__^/__^/__^/__
M^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/]_>'__^/^_N+]_
M>'\`````````````````````````````````!_>'__^/__^/__^/__^/__
M^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/]_>'^_
MN+]_>'\`````````````````````````````````````!_>'__^/__^/__
M^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__
M^/]_>']_>'\`````````````````````````````````````!_>'__
M^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__^/__
M^/__^/__^/]_>'\````````````````````````````````````````````
M``!_>']_>']_>']_>']_>']_>']_>']_>']_>']_>']_>']_>']_>']_
M>']_>']_>']_>']_>'\`````````````````````````````````$````
M!P$!``4````)`@$```%`````0(!`````P``````\,<"`9 &``D```!7># X
M+G,Q.0!"`@(%D 8`O ````\````#`" .Z8\``!X``3 !````"0```%=X,#@N
M<S$Y`````$ `!S# G(T@7"? `4 `"# ``Y$A7"? `0(!`C<!`````````!X`
M`S<!````!0```"YS,3D``````P`%-P$````>``<W`0````D```!7># X+G,Q
M.0`````#``LW70$```,`^G\`````0 #[?P! W:-71;,,0 #\?P! W:-71;,,
:`P#]?P`````+`/Y_``````,`(0[%DP$`<A]
`
end
```

```
---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

108. [wxsig] RE: Intermittent Transmitting

```
From: William Beals <will@beals5.com>
Date: Mon, 25 Sep 2000 20:24:18 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111241-2000.09.25-21.26.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Rich:

I send data just after the count first shows 59.

A good way to see if the T238 is sending data is to hook the computer port (not debug port) up to a computer and see if the data is making it out. I send exactly the same data on both ports, just on different pins. Common perils are things like mismatched baud rate and stuff (been there, done that!). Error counts should not affect transmitting data. In the event of errors I just average out the error-free samples I did get.

Another simple way to test the setup (in TNC-DIR mode) is to exit the weather mode to the menus and then go back to weather logging mode. I start off each session by sending the firmware version number so you should see a transmission within the first 5 seconds of entering weather logging mode.

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Monday, September 25, 2000 7:49 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Intermittent Transmitting

Will,

When exactly does the text get sent to the TNC? Is it right at the end of the 59th count?

I am still having intermittent trouble with sending data. I thought the problem was that I wasn't making the nearest I-gate, but after watching my TNC it appears that nothing is happening at the 59/1 count. I hooked the TNC to my computer and checked to see if it was still in conversation mode and it was. I typed in text, hit enter and it sent the data.

If I had a better idea of the timing involved I would know exactly when to check. Do you recommend a way to monitor the output to see if it is sending
something? The only thing unusual I see about my installation is that I do
have high error counts. I am still displaying all the data on the T238

however. Is there a chance that the errors prevent the transmission?

Thanks,

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(AH"`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`F````4D4Z(%MW>'-I
M9UT@26YT97)M:71T96YT(%1R86YS;6ET=&EN9P`F#@$%@ ,`#@```- '"0`9
M`!0`& `2``$`. $!(( #``X```#0!PD`&0`4`!(`'0`!`#T!`0F `0`A````
M,D)&,C@R0S<Q.3DS1#0Q,4$X-38P,# P13@Y0C-#,#D`^P8!`Y &`%P)```A
M````"P"```$````+`",``````,`)@``````"P`I```````#`"X```````,`
M-@``````0 `Y`. PA-]@)\ !'@!P``$````F````4D4Z(%MW>'-I9UT@26YT
M97)M:71T96YT(%1R86YS;6ET=&EN9P````(!<0`!````%@`````' )V#?A,>"
M\BR3&1'4J%8``.B;/ D``!X``'@P!````!0```%--5% ``````'@`?# $````0
M````=VEL;$!B96%L<S4N8V]M``,`!A"M5O\C`P`'$#$&```>``@0`0```&4`
M``!224-(.DE314Y$1$%404I54U1!1E1%4E1(14-/54Y41DE24U132$]74S4Y
M04=/3T1705E43U-%14E&5$A%5#(S.$E34T5.1$E.1T1!5$%)4U1/2$]/2U1(
M14-/35!55$524$]2``````(!"1 !`````-P8``#,&``#<"0``3%I&=>7 =8 _
M``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" [
M"6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V# ;F<Q,#,S"Z8'\#II
M#V Z"J(*A J 22 C#Z 4T"!D80&0(&HT=7,%0&$!@ 20('0H:&4@!:!U`C @
M9H9I#Y %0'-H;W<$( @U.2X72D$@9V^A!' @=V%Y&6!O&!&'&9 &D!EC5#(S
M.!S0]P0@&"(+@&<89!VA''$:@$1O:QEE;7!U&3)P80D1("AN;P5 `0!BAG4>
M," B*2!U<!QB_QB@'Y<`<!A0'*D>5@# %+$-'C!I!4 (8'0N("#)& 5E> #0
M=&P<41F!W'-A!X 89 (@( ;@&7#Y(!-S+!BT)M$>``$@!)!K"? %0' +@',D
MT0A0;>L$8 .@< 9Q; 0@"L 9D$<9<!X1!"!L:6L9D&T[! ``P'0/8 F )O!A
M=9T84'(8@!F0(I-T=0$@O2!@8@GA&6()<">@9 (@DRI2&( A*23117(#8,\%
MP!FS';$:@'5L&% @@O\9$"AP): 98"PP`( K, ) KQX6)-(M8R5@=BBB;QSP
M?P20+O$$(!@`&,0R@"PP9^\9D"2A,B0NXBT#4!RQ)C'_"U 'D1@``@`84#0P
M), ;"_\@@2V1&! '<#7!'"89,!CA-R7S#[ A@2@+@!U 3D/P+41)4B/P!'$A
M8!ZDYR5P)'$9<G=E&( WL@1B]SB3&8$'@&X8T"*#&7$#H'L;X"O18Q\Q'( [
MU@D`9_YG'A($8B34`9 @03+0,N'O`- G, ^@!!!I)M(<4!W6^QER&A%M'# J
M03/Q06,],/<&T#?"'(!Y"& OEARB&*"_,,5!5 /P*G)"5ACA-1@1_P6@%- $
M(#+2`C &<1XA/K_W/\(72@/P; E0%UD*]"K@_#,V`4 5H % $3 @D#"!H1!T
M,38@+4VR3P40_S]A!T %T$%!-"%-LQ=&3,0'3)$+$TS&:2TQ-#3C`4 JX#$X
M, % #-!14[AB($8#81<P#))B%M04($(%D&M&,B!;4R!-5% Z=PH`>$"+.^ `
M(&@JX&YK+BX0?'1=%T52@ 9@`C!2YTW?1Y$<0">@!F %,&5#TQ/P!R>@`=!1
MX" W.C0Y2"!0357G5&]2YU1D05 Z8%=8!@`IP&/O!S$Q\1DQ..)'`V A@%7H
M&'5B:C"!4N=;=WBY`)!G75N4,1(HHE0PV7]/7U!J3!0+MA=3"N,*@%?U2L$L
M%TI7/<(E=BWP!Y'[&7(9,'@%0#9Q&!(PH3RTO3H!/R3A!" D<4X1:!CQ_S2%
M&$$RT!=$&7(:T"<A&;/^/Q=,)D LL4K!'O SX"0S_UZJ,, (8 )@.$%4$AW:
M)-/_&7 (8&@R&7$71$RQ;8%K@)\<,&6B:'$8`'"Q;B<%0!\D!1ER+A J,1CA
M22UG?RQ!)Z @X!CV'# K@3]S>><71#H!)&)A<"G #X%PY/\W@B0S!" /<'6Q
M`P`>(6AU^1K0+S$9I"33'P(KL6^G_W4R''%TL"'\*Y$^4'EB'(?_)'%PLFND
M.=%'@4,R&(!!<M\$8A=$(I)\M&[4>2G ?T'_+6%F$2>@*H %0$@3(H,D<;=F
ME"-5&OM)'/!Y`6$84/\8H"TP7P$%P#9 .^ RPF7#^P=P;#1V!O R@!A0<4$O
MP^YK(( 'X"5V=SW"'' 71/M[DR311$0T"7 ?D3T1A"+_'#4I@21P!;$9<B2A
M'\%\#/\=J!=$1" '@"IS9X$=0(MBWFXEPQX2&= 8T'5;<D3T_P;@-'%ZD2CQ
M`9!*T'XD'J+_<00M\!=$; $9D"J :# R]*\O)233:W<>`',+47EW@W]KT2-'
M)M$=%I*5&I R<7*?)-)EHRI!(>$/<&YC+B3_-)@$(!$P,G1EPT5Y:HN.H-T`
M<&LGD!=*4WPM6N!4P;=*_@J 3R=91&$J,F,(</<HDB7!C\!B!/(M,'OS7B,Y
M&0!S.AP@0]$'0'- ZQ^3#Z!R,H N'Y%TU1R _QG0HA<8%(1!%>$?,%@`"W!O
ME@$<@#70,^$M7B-10#7@-S W34 JX!C@*1![`9 1,"X%L& 7%V(1\0`!JK `
M`P`0$ `````#`!$0``````,`@!#_____0 ``," LB ]@)\ !0 `(," LB ]@
M)\ !"P``@ @@!@`````P ``````$8`````X4````````#``* "" &````
M``# ````````1@`````0A0````````,`!8 (( 8``````, ```````!&````
M`%*%``"W#0```P`)@ @@!@``````P ```````$8``````84````````>`"*
M"" &``````# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``
M````P ```````$8`````#H4````````#`"> "" &``````# ````````1@``
M```1A0````````,`*8 (( 8``````, ```````!&`````!B%````````'@`X
M@ @@!@``````P ```````$8`````-H4```$````!`````````!X`.8 (( 8`
```

```
M`````, ```````!&`````#>%```!`````0`````````>`#J "" &``````#
M```````1@`````XA0```0````$`````````'@`]``$````%````4D4Z( ``
,```#``TT_3<``(B-
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

109. [wxsig] DS1994

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 25 Sep 2000 22:05:34 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111251-2000.09.25-22.11.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ok, finally got around to programming my DS1994 but had some problems.

My clock is 5 minutes slow and no matter what I do the darn thing won't
reset to the current time.

Ideas?

Good News - T238 picks up the time (albiet wrong) from the DS1994 every
time.

Rich - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

110. [wxsig] Re: QC Wx Program

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Mon, 25 Sep 2000 22:23:49 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111254-2000.09.25-22.32.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich,

I checked Russ' numbers and got the same result. When I back-checked
your numbers, I got a different input. Russ' formulae are correct. By
appearances, you stared with 38deg, 37min, 0.77sec (N) which computes to
38.616880556 deg (N), and -92deg, 20min, 0.6502sec (E) or, 92x20,0.6502
(W). This calculates to 92.333513944deg (W). Now: On review, I
believe you provided deg, dec. MINUTES, so, it'd be:

38deg, 37.77min (N), or, 38.6295deg (N) --and--
92deg, 20.6502min (W), or, 92.34417deg (W)

In other words, when I first read your note, I *thought* you were saying
the first: 0.77sec, not 37.77 min... If you were reading directly off
the GPS, I suspect it was delivering degrees and decimal minutes, like
what the NMEA GLL and RMC sentences provide.

So: Does this help muddy the waters further?

--
Rich Beckwith wrote:
>
> Guys, I'm confused.
>
> Gerry, you gave the same figures I sent to Russ in the first place "38.6295
> 38 deg. 37 min. 46.2 sec NORTH and -92.34417 92 deg. 20 min. 39.012 sec
> WEST".
>
> Russ, if your calculations show 38.61688 North and -92.33351 West as correct
> lets try them and see. I can tell you without a doubt that the stuff I
> report to Findu and MapBlast is on the money, so I am sure it is a
> conversion thing I'm just not getting through my thick head.
>
> More "brain fade"
>
> Rich - Wn0x

>
> >> > Russ, I guess there is some confusion over "decimal degrees". I have
> >> > verified my numbers and they are accurate for 38 degrees 37 minutes and
> >> .77
> >> > decimal seconds north by 92 degrees 20 minutes and .6502 decimal
> seconds
> >> > West.
> >> >
> >> > I reported 38.6295, -92.34417 but for some reason I still show up in
> >> > northwest Missouri. Are you sure the don't need decimal seconds, which
> >> > would be expressed as 3837.77N, 9220.65W?
> >>
> >> Rich,
> >>
> >> The QCMS people were quite specific that they need decimal degrees. For
> >> your latitude of 38 degrees, 37 minutes, 0.77 seconds, wouldn't the
> decimal
> >> degrees be
> >>
> >> 38 + (37 + 0.77/60) / 60   = + 38.61688 degrees (north latitude)
> >>
> >> I think that the longitude of 92 degrees, 20 min, 0.65 seconds would be
> >>
> >> 92 + (20 + 0.65/60) / 60   =   - 92.33351 degrees (west longitude)
> >>
> >> I don't have a book with the equations here at home and am making a stab
> at
> >> them. My memory could be bad, but these look right. Note that 38 deg,
> 59
> >> min, 60 sec would be
> >>
> >> 38 + (59 + 60/60) / 60   =   39.00000 degrees
> >
> >Your stab is right on, Russ. If the original DMS coordinates are
> >correct, Russ' values are equivalent.
> >
> >38.6295 38 deg. 37 min. 46.2 sec NORTH
> >-92.34417 92 deg. 20 min. 39.012 sec WEST

73, gerry
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

111. [wxsig] RE: AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Tue, 26 Sep 2000 10:43:57 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111315-2000.09.26-09.52.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Could it be that I need to re-flash my prom? If I did that would I have to
>go back to the roof and redo the wind direction again?

>Mark G7LTT

Mark,

Try Will's suggestions first, but if you ever do have to reflash the micro,
you can generally get the sensor IDs from the DalSemi software or Arne's
software. I posted a procedure for doing this about a month ago with the
DalSemi s/w. Arne can tell you where and how he stores the ID's in his
software.

(Will, I promise I'll get the whole procedure written up for you. It's
about 95% done, but work is pressing at the moment.)

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

112. [wxsig] RE: AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Tue, 26 Sep 2000 11:26:01 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111322-2000.09.26-11.34.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, The peet mode works ok with the KPC3+ as it does have a LF. The
KPC3+ requires the string to have a LF at the end or it will not load
the text into any of the LT buffers. I have used the KPC3+ with a GPS
and it worked great but the GPS was spitting out a LF on the end. As far
as I can see this is not documented in the KPC3+ manual. Peet mode is
what I am using now on my T-238 system Is the "APRS mode" TNC-LTP,
TNC-DIR or both?
Thanks, Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

113. [wxsig] RE: AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

From: Michael Barelli "W□MAF" <barelmic@yahoo.com>
Date: Tue, 26 Sep 2000 11:41:18 -0700 (PDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111329-2000.09.26-13.49.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Great you got the two to talk. Make sure you program BLT 1 to 5 min and BLT 2 to send your position
at 10 min . Just program LTP2 with your position. I believe that TNC-LTP, TNC-DIR & Peet modes are all
 APRS modes. If you use the Computer out to terminal you will see the strings and what are sent. Just
be sure to change to the right data rate on your Terminal program. I do not think that the new ver Bill
 has sent out has the LF in the DIR mode. It does not look good for KPC3+ ver 8.2 will work unless you
use the Peet mode until Bill changes the Code. Heads UP.
73
  Bill Ellis <rwsw60@email.sps.mot.com> wrote:
Will, The peet mode works ok with the KPC3+ as it does have a LF. The
KPC3+ requires the string to have a LF at the end or it will not load
the text into any of the LT buffers. I have used the KPC3+ with a GPS
and it worked great but the GPS was spitting out a LF on the end. As far
as I can see this is not documented in the KPC3+ manual. Peet mode is
what I am using now on my T-238 system Is the "APRS mode" TNC-LTP,
TNC-DIR or both?
Thanks, Bill N5ZTW

You are currently subscribed to wxsig as: w0maf@arrl.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Michael Barelli W□MAF

Do You Yahoo!?
Send instant messages & get email alerts with Yahoo! Messenger.

114. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Tue, 26 Sep 2000 19:11:10 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111378-2000.09.26-18.19.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, Done some basic power supply tests. pins 23-25 have 6.6v on them. The
output of the 7805 has 7.5v with the light on and 8.8v with the light off.

I reckon that its a duff regulator. I'm gonna change that and see what
happens. If it is. TAPR owes me a 7805 :-}

Mark

----- Original Message -----
From: "William Beals" <will@beals5.com>

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Monday, September 25, 2000 10:11 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> Mark:
>
> Reprogramming the flash likely won't fix the problem as corrupted code
> would more likely crash the processor than just give you bad data. It is
> fairly easy to do though and the good news is that as long as you use the
> MON08 software you will not lose any of your sensor settings.
>
> If you bad reading was 31 degrees F I would have a lot better explanation
> as to your problem as that is usually a sign that the sensor ID got
> mis-programmed somehow. I suspect it is something like a device that is
> dragging down the bus and not allowing good communications or the sensor
is
> not getting enough power during the conversion process. If you can
> re-check pins 23, 24, and 25 of the processor connections that would be a
> good start. The other thing to do is measure the 1-wire bus voltage with
a
> voltmeter. If it is mostly above 4.8V and then occasionally dips to
> something lower that is a good sign. If it does not, then there is a bad
> element on the bus..
>
> will
>
> -----Original Message-----
> From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> Sent: Monday, September 25, 2000 7:03 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> OK, so I had the Dallas PC interface hooked up instead of the T238 and
when
> the T238 says the temp is 32f I swapped it over to the Dallas gizmo and it
> read 55f which is what it should be. Back and forth I tried it and every
> time the PC was correct.
>
> I have left is on the PC all day with that Finish software and according
to
> the log files its read correct all day. I think I can say that the 1-wire
> thing is ok.
>
> Could it be that I need to re-flash my prom? If I did that would I have to
> go back to the roof and redo the wind direction again?
>
> Mark G7LTT
>
> ----- Original Message -----
> From: "Russ Chadwick" <crb5@uswest.net>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Monday, September 25, 2000 8:09 AM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > ----- Original Message -----
> > From: Mark Phillips <g7ltt@g7ltt.com>
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > > OK, I give up. This morning its back to 32f again. Does it sound like
a
> > > faulty temp device?
> >
> > Mark,
> >
> > The best way to determine if a given 1-Wire sensor is faulty is to put
> the
> > unit on the bench and use both the T-238 and the Dallas Semiconductor
> > software to see if the response to a physical input (spinning
anemometer,
> > heat, etc) is appropriate. If there is a question, I run them on the
> bench
> > for several nights and make sure that everything is consistent. I don't
> > like to change out a sensor unless I know for sure that it's faulty.
> >
> > Russ

> > kb0tvj
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

115. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Tue, 26 Sep 2000 19:29:25 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111383-2000.09.26-18.38.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

SORTED!!!!!!!!!!!!!!!!!!

Well who'd a thunk it!! Changed the 7805 and wallop. 5.2v where it should
be and a very nice 48f like it should be.

Changing the regulator also sorted out my display problem. No longer does
the contrast change with the light going on and off. Also, the regulator
runs MUCH cooler too.

I'm gonna flash over the prom anyway as I'd like to use my KPC3+ for APRS.
I'm assuming that the code has been re-done?

Thanks for all your help folks.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Tuesday, September 26, 2000 7:11 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> OK, Done some basic power supply tests. pins 23-25 have 6.6v on them. The
> output of the 7805 has 7.5v with the light on and 8.8v with the light off.
>
> I reckon that its a duff regulator. I'm gonna change that and see what
> happens. If it is. TAPR owes me a 7805 :-}
>
> Mark
>
> ----- Original Message -----
> From: "William Beals" <will@beals5.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Monday, September 25, 2000 10:11 PM

> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > Mark:
> >
> > Reprogramming the flash likely won't fix the problem as corrupted code
> > would more likely crash the processor than just give you bad data. It
is
> > fairly easy to do though and the good news is that as long as you use
the
> > MON08 software you will not lose any of your sensor settings.
> >
> > If you bad reading was 31 degrees F I would have a lot better
explanation
> > as to your problem as that is usually a sign that the sensor ID got
> > mis-programmed somehow. I suspect it is something like a device that is
> > dragging down the bus and not allowing good communications or the sensor
> is
> > not getting enough power during the conversion process. If you can
> > re-check pins 23, 24, and 25 of the processor connections that would be
a
> > good start. The other thing to do is measure the 1-wire bus voltage
with
> a
> > voltmeter. If it is mostly above 4.8V and then occasionally dips to
> > something lower that is a good sign. If it does not, then there is a
bad
> > element on the bus..
> >
> > will
> >
> > -----Original Message-----
> > From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> > Sent: Monday, September 25, 2000 7:03 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > OK, so I had the Dallas PC interface hooked up instead of the T238 and
> when
> > the T238 says the temp is 32f I swapped it over to the Dallas gizmo and
it
> > read 55f which is what it should be. Back and forth I tried it and every
> > time the PC was correct.
> >
> > I have left is on the PC all day with that Finish software and according
> to
> > the log files its read correct all day. I think I can say that the
1-wire
> > thing is ok.
> >
> > Could it be that I need to re-flash my prom? If I did that would I have
to
> > go back to the roof and redo the wind direction again?
> >
> > Mark G7LTT
> >
> > ----- Original Message -----
> > From: "Russ Chadwick" <crb5@uswest.net>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Monday, September 25, 2000 8:09 AM
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > > ----- Original Message -----
> > > From: Mark Phillips <g7ltt@g7ltt.com>
> > > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> > >
> > >
> > > > OK, I give up. This morning its back to 32f again. Does it sound
like
> a
> > > > faulty temp device?
> > >
> > > Mark,
> > >
> > > The best way to determine if a given 1-Wire sensor is faulty is to put
> > the
> > > unit on the bench and use both the T-238 and the Dallas Semiconductor

> > > software to see if the response to a physical input (spinning
> anemometer,
> > > heat, etc) is appropriate. If there is a question, I run them on the
> > bench
> > > for several nights and make sure that everything is consistent. I
don't
> > > like to change out a sensor unless I know for sure that it's faulty.
> > >
> > > Russ
> > > kb0tvj
> > >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> --
--
> ----
>
>
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

116. [wxsig] Re: T238 runningHOT with the LCD backlight on

From: William Beals <will@beals5.com>
Date: Tue, 26 Sep 2000 18:36:15 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111389-2000.09.26-19.53.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

Whoa! Finally. Weird that it was a bad regulator though, those things are
usually bullet-proof. My only caution for you now is that it sounds like
you have been running all your 5V stuff on as much as 8V. That is clearly
outside the max ratings for much of the electronics. Since all is working
you should be OK. I've fried a couple of 6808s by accidentally trying to
run them from +12V. I guess +8V is OK.

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Tuesday, September 26, 2000 5:29 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

SORTED!!!!!!!!!!!!!!!!!!

Well who'd a thunk it!! Changed the 7805 and wallop. 5.2v where it should

be and a very nice 48f like it should be.

Changing the regulator also sorted out my display problem. No longer does
the contrast change with the light going on and off. Also, the regulator
runs MUCH cooler too.

I'm gonna flash over the prom anyway as I'd like to use my KPC3+ for APRS.
I'm assuming that the code has been re-done?

Thanks for all your help folks.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

----- Original Message -----
From: "Mark Phillips" <g7ltt@g7ltt.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Tuesday, September 26, 2000 7:11 PM
Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on

> OK, Done some basic power supply tests. pins 23-25 have 6.6v on them.
The
> output of the 7805 has 7.5v with the light on and 8.8v with the light
off.
>
> I reckon that its a duff regulator. I'm gonna change that and see what
> happens. If it is. TAPR owes me a 7805 :-}
>
> Mark
>
> ----- Original Message -----
> From: "William Beals" <will@beals5.com>
> To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> Sent: Monday, September 25, 2000 10:11 PM
> Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
>
>
> > Mark:
> >
> > Reprogramming the flash likely won't fix the problem as corrupted code
> > would more likely crash the processor than just give you bad data. It
is
> > fairly easy to do though and the good news is that as long as you use
the
> > MON08 software you will not lose any of your sensor settings.
> >
> > If you bad reading was 31 degrees F I would have a lot better
explanation
> > as to your problem as that is usually a sign that the sensor ID got
> > mis-programmed somehow. I suspect it is something like a device that
is
> > dragging down the bus and not allowing good communications or the
sensor
> is
> > not getting enough power during the conversion process. If you can
> > re-check pins 23, 24, and 25 of the processor connections that would be
a
> > good start. The other thing to do is measure the 1-wire bus voltage
with
> a
> > voltmeter. If it is mostly above 4.8V and then occasionally dips to
> > something lower that is a good sign. If it does not, then there is a
bad
> > element on the bus..
> >
> > will
> >
> > -----Original Message-----
> > From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> > Sent: Monday, September 25, 2000 7:03 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > OK, so I had the Dallas PC interface hooked up instead of the T238 and
> when

> > the T238 says the temp is 32f I swapped it over to the Dallas gizmo and
it
> > read 55f which is what it should be. Back and forth I tried it and
every
> > time the PC was correct.
> >
> > I have left is on the PC all day with that Finish software and
according
> to
> > the log files its read correct all day. I think I can say that the
1-wire
> > thing is ok.
> >
> > Could it be that I need to re-flash my prom? If I did that would I have
to
> > go back to the roof and redo the wind direction again?
> >
> > Mark G7LTT
> >
> > ----- Original Message -----
> > From: "Russ Chadwick" <crb5@uswest.net>
> > To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
> > Sent: Monday, September 25, 2000 8:09 AM
> > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> >
> >
> > > ----- Original Message -----
> > > From: Mark Phillips <g7ltt@g7ltt.com>
> > > Subject: [wxsig] Re: T238 runningHOT with the LCD backlight on
> > >
> > >
> > > > OK, I give up. This morning its back to 32f again. Does it sound
like
> a
> > > > faulty temp device?
> > >
> > > Mark,
> > >
> > > The best way to determine if a given 1-Wire sensor is faulty is to
put
> > the
> > > unit on the bench and use both the T-238 and the Dallas Semiconductor
> > > software to see if the response to a physical input (spinning
> anemometer,
> > > heat, etc) is appropriate. If there is a question, I run them on the
> > bench
> > > for several nights and make sure that everything is consistent. I
don't
> > > like to change out a sensor unless I know for sure that it's faulty.
> > >
> > > Russ
> > > kb0tvj
> > >
> > >
> > > ---
> > > You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> > > To unsubscribe send a blank email to
leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
>
--
> ----
>
>
> >
> >
> > ---
> > You are currently subscribed to wxsig as: g7ltt@g7ltt.com

> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(AD``0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`Z````4D4Z(%MW>'-I
M9UT@4F4Z(%0R,S@@<G5N;FEN9TA/5"!W:71H('1H92!,0T0@8F%C:VQI9VAT
M(&]N`/\2`06 `P`.````T <)`!H`$@`D``\``@!!`0$@@ ,`#@```- '"0`:
M`!(`(0`I``(`6 $!"8 !`"$```!#0C8T1C!!.$0Y.3-$-#$Q03@U-C P,#!%
M.#E",T,P.0`<!P$#D 8`^ \``"$````+``(``0````L`(P```````P`F````
M```+`"D```````,`+@``````P`V``````! `#D`P!6$\1HHP $>'' ``0``
M`#H```!213H@6W=X<VEG72!293H@5#(S."!R=6YN:6YG2$]4('=I=&@@=&AE
M($Q#1"!B86-K;&EG:'0@;VX````"`7$``0```!8````!P"@:\7RH\&3,D]D1
MU*A6``#HFSP)```>`!X,`0````4```!33510`````!X`'PP!````$ ```'=I
M;&Q 8F5A;',U+F-O;0`#``80>J5S: ,`!Q"\$ ``'@`($ $```!E````34%2
M2SI72$]!1DE.04Q,65=%25)$5$A!5$E45T%304)!1%)%1U5,051/4E1(3U5'
M2"Q42$]3151(24Y'4T%2155354%,3%E"54Q,150M4%)/3T9-64].3%E#0554
M24].1D]260`````"`0D0`0```, ,``"\# ``C1L``$Q:1G6E#\P:/P`*`0,!
M]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U
M2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@P&YG,3 S,PNF!= Y"L!K.@JB
M"H0*@%=HP&]A(2 @1@N !T"(;'DN&%!796D+("P@= ]P!4!I!4!W86$$(&$@
M8F$94 EP9SIU"V!T!;$9< A@9VC>+!LB#Z 980N 9QH1"7!P('5S=1BB&D :
MP&Q%#[ M$3!O;V88X4T''2 "(!T18V%U=&DM`B @`A %P'D(8"!N[F\'X 0`
M&6=S"& 4T 0@N&QI:QOP'W(/<'8;\/YB">$:@"# `P`6`!H@&+"3'V(%P#56
M()!T=0$@5QY1&B $(&T5$&@D`CC:5ACA5!F#!"!C'7 *P/L=$0A@= "0`0`9
M81OP`,#^>!J &9 <,Q\R)$,=X":#,F4=<&-T`V #`&-S=1CA4PN 8QOP(L(?
M\7>O!; 4L2*@'W)S&T%L&5"1(? @3TL8X4DG(<'?`U (D!E0&C %H'4+4!OP
MH2@A-C@P. 0@8AT@O0#08R91`C <\RC0>2*"-QKP(C(F@FTL,0-P("OD,3(D
MTDD@&K 'D 0@_BLDP!_B*Z$72@/P&+ 72O,*]"$0,S8!0!6@`4 =L89T*+$0
M=#$V("TUDCI/!1!G&((%T##Q86=^9363%T8TI#1Q"Q,TIFFP+3$T- % (1 Q
M+7#W`4 ,T#DS8AA@`V$7, R2\F(6U"!0'" 8L 4@!" `6U--5% Z9S<J; )
M0#R3+@6@;5U?%T4Z8 9@`C ZQU0PX63\87D;D 9@!3 OP"'P!< \,C8;D '0
M.< C0#HR2CD[D$T]EU1O/FA!U%!2&0!8!@!P!9 ',=\KX (P!) 'D 5 1P-@
M+. Q/9AU8FHHL3K'6W>2> "09UT'\&4Z)0"(,C,X(C9(3U09X$<9P"1P)I),
M0T0:06/^:R$0&W %0 (@-S\X2C/T#PNV%U,*XPJ 4T]25.A%1"%,_R$72RB0
M`R#Z=Q@0)RR"&7 @P#N &<![31 84$,/<!8`+'$FDC<]+7 U&B 4T!GA&+!O
M<.$8X#4N,G9/(4.1(&/_*Q,71"MQ48(:,"' +M ?H/,I$!OP-#@CP"$34O<A
MX?\QRU!S+O,FH1J8!T @H""1WP`@+'$F$20P'2!D! `+4=\=(!VQ`F OP!C@
M3B] "0#S4*$%P&1O!Y 71":2!:!_`C G$$/!#V%0H4>(2*1GOF\B@B/B49$=
MX!WQ05BQ'QN25^D71")!!"!-54/>2"RQ!O _\1KP;S'+*_#O+]!>4")@&C!F
M"V K`!Y0WU1Q)H,=L2_0``!Y&? MT?\$("OP&5 A$R\Q', FL1T@8$M00S,K
M'R-"<5/O,<5C$AH`'-!M5X09D5PD/R9A#W MH2(#-M!;@&YE?C\72B413^ G
M="+')J!L>G ?(6QKT#'+.UL;D$<`-TQ45"]+0S+814Y)%T0'PEDJ41N0Y$Y9
M-8 @,7% %C 71!TY4"=5`%) 43 Q3B (,#<S<A U-"XT#0' 5Q=$2-!T<#HO
M]"]W=$ N//<72C63*Y!/-?TUA!=$.H,@(CM;(O0@/#R=/FLU0<!X0$)O]T-[
M>3%%XT A$". *3 !D/41,"X%L&=Z53XC/N\_^OPW.G% 0/=$UD7/1M]'[YM(
M^1=H/BN1&Y @1&J1[R"1!X :00"08UI '\ _\;T<T' +4"ZA0[$I,7 +@!L$
M((,@+1/P(90V+C;?4G ?`2^B&. E$&6&9B81'G!9<2@E43-IPC<N-<=2<5U\
M7K4X+CB-KU\B_X9EAF8PL EPA0"*PQF3&A+^9".B&I<8X&,87/49<U&"_P^@
M74$9@89F#W"(L GP*3'^22/ &<$$`(LQ>R*(020AZRFQ420Z-R!]D*T6\I"M
MKW7?=N^&P'?U5SO"82_0WD(EL%BP?/(RH4 A\%BA_U) >BB&P'K/>]]\[WW\
MAL#M?M1-`B!_?C5 118@@0K_I(&!WX+O@_^%#I$&AF:9]/\7-:S1K'BHP!VQ
M"<">0&B5GRPA8\,A$AT1*D!N)P5 _SD`)O!D95J") (%H2) ?^'_&5!I<JQX
M*D K,@1@')&P%7\%`&/29&4IH 00&P,#D6K[',!>,6DAP1]R&E)_< &0[RO"
ME>4$`*QX9@MP)=(EL/YS+J$O0%N &R51<R:27E#_!' ?H ?0!" ?]AH!6Q(D
```

```
M`L\?<F916\>L>4].+8 @D?\!@!GP')$?<C*2'Z$%0 D`_QOA9/$H$B,##Z `
M@ 6Q#Z'_)S.0EJW:EP&VY@EP&F B@KT9\C.!( $`"<($($8PH?^SE"&C&C )
M``5 (? "0 20^1=$97@+41B0'N*L>!H!_R\Q(P.Q:1ET!" <QAHPJ''WD@4F
MDL%E2:JP7E"5YX; _6B0<QVBKN,L<8>"&!!T8/\PDAS06? HL9<DAW,<$R$$
MO9*Q911P*:'*=:QX9"<0]F=7<UN =R^#'3$:$5&1_\ 24=(#\"*1NR,]421
M*0'_R",$(!L#S%:&9KA:P!(VP/_!\RB '["Z8H@TDM %$%>5_UQA5'$`D!\!
MM54KPL.D'K"_R&EJ40]@D<&)9D!!-!N0_U&"B?$H);587&%JH"C UF/O&7.S
ME"'P%T1AK'B[(R. _PK /3 D\BT1)I$;$B[UN@&?'_$'@!H`"' F=#$M`_#[
M')'4(G8&\ &0-L R-AEP_X9FXFGFXM"1!)#<)- 4!&#_(X#+0@;@(<%S$#%!
MNJ4#H/^U<!ZPVV(<\UG0/ $:\*QX_]!YB$/*=AHPXQ3+H>FW6X+_P )?LR^#
M4L(:$5.%&F"L>-\HD0> `C"*M=02+L)?LV+_,J>MRS6?-JVLTG?T.U\\;_\]
M=JS2I*^EOH#P%C"G":!4_Z#/0W_\A:?/J-^I[ZK_K=F_K'B&XEC!,+ /<%#4
M1"G1?QH!9M 9L %2N1 IH1@0;_\A,!E0+. *`2. Q%$H%@03OU&!AF92D<AI
M# <VH'D@`N\;\2_ "S'$X3(CP,]Q&?!_EI$94!G!9!2Z$@E7]^!ZG[/P#(@9
MP-SZ&F$U-2/ _T\P*1 D<"H2(#95YYY@!?'_47-G(04Q,+ HT"QB&<%1@O?1
MD%2!#8EIF$$FD@GAQ,+_LA+/T?2_PV(AE!UPOQ ?XK_T!0GA*=)_<04&DD%&
MF^#_HT D<+[W5!/L,&P0Q'*&9O_M2EVSKM"PT26@NZ&2@1.S_QG5'0:3L>1S
M^C PL-S!#J*_:-=+Q.8T#8K34AQ":QI/_:SA0RLC4O$K<9(C,+"'4+]0PB]!
M-M!CM%FA9*(_EO+_,+!9T%#2X5<;A%O%[5E>4/\%TQ$62:#?85&"Q6"Z`UU"
MOU&16= :`MMR-K"Y(&YJQ7^MR_H#;S,QKYLOG#_Y2B+N4F90DI!0<60%$!8@
M>3'QM+!B-4!F4)@!XZ"'4/YTK&F@?P$/HI^CKOS/_=_[CQ#_`#E?8/]9`L\#
MWP3O_P7_!P^LPS2/-9]&QOFO^K'_>5]&BD&/0I]#KT2_1N-0OW]&Y(;$"-"V
MDXB@BS+J0W+_3J*28RYV#\(Q0U]0AS A\_]8X=8`\M6T0N?_1N0*8)-0?G2(
MX@]AT80QF$9LFA(L_UH_1N3CXJ7@MF%E(KG2Z7+_:)'Q\2]AMH..P.8PG?"_
M4?_!9<K!606[PA$PC#$-BT:*_]8!\^@-8!1Q'S)F4NKP3T7^5(G@#&0)*CY@
M:)#;`9+0_R,`UVCMQ+\5$2&5<E\!+O.?F!"(,,R0:-.44'!H#M#OUB&_\$?@
MC#(HS[!'X$ZB_U>7AU"S\.EC6^H;D.6 \3'YZ7!C*>]#B+ \`-NP.R#G"X#P
M-/&X('%_0<@R4Q+_3G&*XQQEK'AD$T:*%I&589\7\?@13J"0(=1$;6'1,?_E
MI9)!%^,FQ]L!A_ +<3MP__ R)63E$+"A1HK1$Q$AE'5_C '+8L%T5L AX9*0
M"-!KW< 0=W04=?<2\"=@IB=X!T9L-W)&BFMB,'1V;FI]_WY?2-U9O0$>\F.?
MVF#%8#MPRT&(D&)SM+#^::7@*A--<['1-T#[35RK_Q$P5L"$]\%2'U$I,,?Q
M^C#_BQ"Y(+_P$2$;\,9AYD!-@H M,34W,#=-/,U_@7^,[(WO@LV#WX3OA?9W
MNZ71GI% G[%K8,!P<AO _X<LB"^)/XI/BU^,:9E^K W_]V.</YU/GE^?;S95
M-D@V*?^L#J*_CX^0GY&OAA^4/Y5/_Y9?EV^8?Z-?H=^;IE>6I4__IE^G;X<,
MJ7^JCZN?K*^,9_^Y>[I:-C>Q#[(?DI^3K^) O[4?MB^W/[A/C&8E9'WB0 (`
MQ< #`! 0``````,`$1 ``````P" $/____] ``<PP/;1E1HHP % ``@PP/;1
ME1HHP $+``" "" &``````# ````````1@`````#A0````````,``H (( 8`
M`````, ````````!&`````!"%`````````P`%@ @@!@`````P ```````$8`
M````4H4``+<-```#``F "" &`````# ````````1@`````!A0```````!X`
M(H (( 8``````, ```````!&`````%2%```!````! ```#@N, `+`": "" &
M``````# ````````1@`````.A0````````,`)X (( 8``````, ```````!&
M`````!&%`````````P`I@ @@!@`````P ```````$8`````&(4````````>
M`#B "" &`````# ````````1@`````VA0```0````$`````````'@`Y@ @@
M!@``````P ```````$8`````-X4```$````!`````````!X`.H (( 8`````
M`, ```````!&`````#B%```!`````0````````>`#T``0```4```!213H@
.``````,`#33]-P``AZ6%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

117. [wxsig] RE: DS1994

From: William Beals <will@beals5.com>
Date: Tue, 26 Sep 2000 18:45:10 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111390-2000.09.26-19.53.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Need more details. Which clock is "my clock", PCs, DS1994s, or T238s? I'm guessing all three. There should be a dozen ways to fix your PC clock and if that doesn't work you should be able to set the manual setting mode on the Dallas software to select whatever time you want. What may be causing you problems is that you can disable the oscillator on the DS1994 in which case the clock won't tick. Make sure that checkbox in the options area is set correctly.

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Monday, September 25, 2000 9:06 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] DS1994

Ok, finally got around to programming my DS1994 but had some problems.

My clock is 5 minutes slow and no matter what I do the darn thing won't
reset to the current time.

Ideas?

Good News - T238 picks up the time (albiet wrong) from the DS1994 every
time.

Rich - Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(B<``0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`3````4D4Z(%MW>'-I
M9UT@1%,Q.3DT`&D%`06 `P`.````T <)`!H`$@`M``H``@!%`0$@@ ,`#@``
M`- '"0`:`!(`*@`@``(`6 $!"8 !`"$```!$,S8T1C!!.$0Y.3-$-#$Q03@U
M-C P,#!%.#E",T,P.0`.!P$#D 8`0 <``"$````+``(``0````L`(P``````
M`P`F```````+`"D```````,`+@```````P`V``````! `#D`P!^%,!PHP $>
M`' ``0```!,```!213H@GW=X<VEG72!$4S$Y.30```(!<0`!````%@`````'
M*!PPA:CP9-23V1'4J%8``.B;/ D``!X`'@P!````!0```%--5% ``````'@`?
M# $````0````=VEL;$!B96%L<S4N8V]M``,`!A"Q7:%O`P``$%0#```>``@0
M`0```&4```!224-(.DY%141-3U)%1$5404E,4U=(24-(0TQ/0TM)4R)-64-,
M3T-+(BQ00U,L1%,Q.3DT4RQ/4E0R,SA3/TE-1U5%4U-)3D=!3$Q42%)%151(
M15)%4TA/54Q$0D5!1$]:14Y7``````(!"1 !````+@0``"H$```%!@``3%I&
M==Z$)ZX_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3
M"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V# ;F<Q,#,S
M"Z8'\/II#V Z"J(*A J !\ )@'8@!& )<" !``&0`Q!S("X@(%=H%P$@8Q$)
M`&-K( 0`(")M`GD9E"(L(%!#<X$:T$13,3DY-!L1@06Q5#(S.',_&2#@22=M
M(&<*4 00"X#,9R '0 ,@=&@)T1D13%1H!) 8@'-H"&!LE1@P8AB 81B0;WH)
M\! @=V%Y!"!T;R#@9FEX('D(81KA&97O`' 8, :0'8%A!4 ?, >0]&XG!4!W
M!; 9X"!1'FI_`F 8@!_A#Z$=@1B `X%U^P= )!)T'1($8AO `Z D8LI$'5%A
M!"!S;P& 'Y W&'$C\R/ 8R)1(;%E=O\$D!V !W$BLQ^0`C 9$R'!QP# &E >
MX6-A=1T#(L+U$3!O([%M!" :`2&C(L*[*D #H&0$`".D)'%O!/#_`Q +8!_@
M!< EYAM3&? ?<?\95":0+/09I")P(C(E0!G0\1D136%K'E$(<"SR(<'[#V %
MD&L&X" P+N$M$P4P_FD"( 0@)Q$?$!H!)"(%H>,)<"? ;'DN%TH#\!U@PQ=*
M"O1L:3,V`4 5H!\!0"L!*" GP!!T,38@:BTXPD\%$&<+@"3A3?$<X6%G93C#
M%T8WU#>A@PL3-]9I+3$T- % <3<@,3@P`4 ,T#QC8EP@1@-A%S ,DF(6U" .
M0C)!`_ =D"!;4TV05% Z=PH`>$ SP%4`(&@W(&XP\&X/L%U?%T4]D 9@`C ]
M]TT"(&3_'Z :T 9@!3 K4![@!< 3\(<:T '0// @.3HP.* D4$U ]U1O/?=4
M0=104ADP6 8`< 60!S%7'' ",!XQ<P5 1P-@=6)P0/AU8FHGL3WW6^1W> "0
M9UT;-3IO.WJ?-R0+MA=3"N,*@$]K&M#_(! Y8330'+ WX#.1"& A0<<?X2L!
M"<!A;6TE4QI0^2YU8G4%0 ]P&# FP"BAVRL&-/M-&E49\C480 N NU" !Y%S
M"0`'X"$R;A_P_P# `D H42?R'' ?(2130H#_!*$=D!T2,&,71$;Q)#)5I+YC
M"' )< (P*',T^TD!`.4FD#\72D=O!' 'L@0@_BT;\RKP,-$$($=P)%,H@WHH
M!T!B") B40-@%@`I[R ``V$N*B@R>1=$6+\71%L^@UN 5S_18 \*.C=9WR+1
M)Q)8-4X!,8!B!/(>X.=.PTDS'4!S.A^ 0R$'0.1S0 6@;7 J8 20*$#^+F:A
M%T1%`%Q `(!DMB01_R%!'Q "8 !P&> K4!C1']U(U\!A*$ M23,\4#4W\# W
M34 W($<0&0`!D+41,"X%L&<72A'Q`&U ```#`! 0``````,`$1 ``````P"
M$/____] ``<P``8JTALHP % ``@P``8JTALHP $+``" "" &``````# ````
M````1@`````#A0`````````,``H (( 8``````, ```````!&`````!"%````
M`````P`%@ @@!@`````P ```````$8`````4H4``+<-```#``F "" &````
M``# ````````1@`````!A0```````!X`(H (( 8``````, ```````!&````
M`%2%```!````! ```#@N, `+`": "" &`````# ````````1@`````.A0``
M``````,`)X (( 8``````, ```````!&`````!&%`````````P`I@ @@!@``
M````P ```````$8`````&(4````````>`#B "" &``````# ````````1@``
M```VA0```0````$``````````'@`Y@ @@!@``````P ```````$8`````-X4`
M``$`````!``````````!X`.H (( 8``````, ```````!&`````#B%```!````
F`0``````````>`#T``0````4```!213H@``````,`#33]-P``K[>%
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

118. [wxsig] RE: AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

From: William Beals <will@beals5.com>
Date: Tue, 26 Sep 2000 18:42:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111391-2000.09.26-19.54.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill and Mike:

The TNC-DIR and TNC-LTP both send out native APRS-formatted data. Peet mode sends out Peet formatted data (obviously!!), but APRS software accepts Peet formatted data so it is sorta APRS-accepted. The difference between the two TNC formas are the baud rate (DIR=4800, LTP=2400), and for the LTP mode I do not send out all the commands that initialize the TNC and put it into unconnected conversation mode.

For now I only have added the LF in the LTP mode as for DIR mode I am emulating someone typing a keyboard and send only a CR. I have not tried adding an LF to see if it works OK. If it does (at least on my KPC3+), I'll go ahead and add it to both formats as well as Peet.

will

-----Original Message-----
From: Michael Barelli "WOMAF [SMTP:barelmic@yahoo.com]
Sent: Tuesday, September 26, 2000 12:41 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: AVAILABILITY OF MODIFIED T238 CODE FOR KPC3+ LF

Great you got the two to talk. Make sure you program BLT 1 to 5 min and BLT 2 to send your position at 10 min . Just program LTP2 with your position. I believe that TNC-LTP, TNC-DIR & Peet modes are all APRS modes. If you use the Computer out to terminal you will see the strings and what are sent. Just be sure to change to the right data rate on your Terminal program. I do not think that the new ver Bill has sent out has the LF in the DIR mode. It does not look good for KPC3+ ver 8.2 will work unless you use the Peet mode until Bill changes the Code. Heads UP.
73
Bill Ellis <rwsw60@email.sps.mot.com> wrote:
Will, The peet mode works ok with the KPC3+ as it does have a LF. The KPC3+ requires the string to have a LF at the end or it will not load the text into any of the LT buffers. I have used the KPC3+ with a GPS and it worked great but the GPS was spitting out a LF on the end. As far as I can see this is not documented in the KPC3+ manual. Peet mode is what I am using now on my T-238 system Is the "APRS mode" TNC-LTP, TNC-DIR or both?
Thanks, Bill N5ZTW

You are currently subscribed to wxsig as: w0maf@arrl.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Michael Barelli WOMAF

Do You Yahoo!?
Send instant messages & get email alerts with Yahoo! Messenger. << File: ATT00002.html >>


```
begin 600 WINMAIL.DAT
M>)\^(B ``0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
```

```
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0! ````4D4Z(%MW>'-I
M9UT@4D4Z($%604E,04))3$E462!/1B!-3T1)1DE%1"!4,C,X($-/1$4@1D]2
M($M00S,K($Q&`-X0`06 `P`.````T <)`!H`$@`J`!8``@!.`0$@@ ,`#@``
M`- '"0`:`!(`) `Z``(`; $!"8 !`"$```!#1C8T1C!!.$0Y.3-$-#$Q03@U
M-C P,#!%.#E",T,P.0`@!P$#D 8`8 H``"$````+``(``0````L`(P``````
M`P`F```````+`"D```````,`+@```````P`V``````! `#D`0$J9S!LHP $>
M`' ``0```$ ```!213H@6W=X<VEG72!213H@059!24Q!0DE,2519($]&($U/
M1$E&245$(%0R,S@@0T]$12!&3U(@2U!#,RL@3$8``@%Q``$````6`````< H
M&\R1J/!DT)/9$=2H5@``Z)L\"0``'@`># $````%````4TU44 `````>`!\,
M`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&$/D[CW(#``<0( <``!X`"! !
M````90```$))3$Q!3D1-24M%.E1(151.0RU$25)!3D143D,M3%100D]42%-%
M3D1/551.051)5D5!4%)3+49/4DU!5%1%1$1!5$%0145434]$15-%3D133U54
M4$5%5$9/4DU!5%1%1$1!5$$``````@$)$ $````D!P``( <``$D+``!,6D9U
M]_'6D3\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"@T,`4 [F<')Q,@_I,C,0
MJP]/?7T*@ C((#NQ"6\R-34"@ J!=@B0I'=K"X!D- Q@8P!0#0L#8P!!"V!N
M9S$PY#,S"Z8@0@,0`R `<,)D!=!I:V4Z"J(*A $*@%1H92!43D,P+41)4AEC
M&P),5,10( ;@=&@@#Z 9@8,(8 5 ;F%T:78:X*!!4%)3+0(0<@# $P) "8 @
M9!TP82X@_"!0"> %0 1B'(,$(!SBPQ[S'>P@*&]B%J (8(!S;'DA(2DL'##7
M'/$=DAR ;P& =PK &N#Y`-!C904P!" @/R%!(O#\(&D%0 0`(N$`("%0'9.O
M(X0)@![!&L)D!I!F!)"O"? CH!PP#[!W">$@'&#_&N C("50&P$@= 0@(T(H
MHFAB8749D'(=,!K@*,$;03TT.# P(D <`?@],C0K8"(Q&7(=X2B3VQP"'T-)
M'G E4&X<4!R([P= `R HH@6@;0.!'\$<8)\=,"5@`P`=0 = :7HI]'LI(AER
M<!SQ)7(","50=?LGX (@;@60'D(R<1U@#Y#7'3$"(!\S+AH*1@6Q+?!O!^ M
MH (@(? @#W =86'N9 $`&9 LTT8P$2S,*:$'+)(;0BU586T@96W^=0M@'4 8
M,"+A!X "("C!W'EP.;(A4!G0>0;@"Q'/&6,<E#6B(5!#4A[!+:#[->,M\G0(
M@3MQ-D ZHP.@?S;1,B$/H!K@!I E8BCP<O)K!"!/2SRR/T,MP >1\B@O\6QE
M*: %0#.R-< @2U!#,RLB,4DG]1E!9R5081K0-C 98S8Q_R5B,B$<0QWD*;$$
M("A0&4)_(^0T*P/P&4 :"@KT,( S_C8!0!?0`4 1,!Q0,K$0=% Q-B M2<)/
M!1!GGPN !T %T >0,W!G94G#'QH&2-1(H0L32-9I+3%V-"OP2!$Q*U$,P4UC
M8MP@1@-A&? ,DF("T1%@/QFP#V%%0!D0(T$90&D@`")77"=D.$U!T3;@6U--
M'! Z*E!041)M3\! >4+P;V\N_2]!71!R&A1.D 9@`C!.]NL:\ I0<QZ >2)
M!F FP>,&T 20(#(V(D !T"M@0" Q,CHT,1[@31E3%U1O4^@=D2!76/T&`' %
MD <Q+9 ",">Q06$21P-@=7!3&'5B:B,RL5/G6W=X`)!G70D'\$4Z#^!604E,
MQ$%"7%!)5%D_X#;@A$U/&T!&245$&O!8,C,X/(!=,$5.H$__&V!!\S;!2V],
M>D@D"[8:&=\*XPJ 68!!0 5 >0A@0K'//7$HM3(A`9!L:Q[!!=#^81G0'( (
M<!K@8T)(P0G W3DA0AP`5B ^LC4?,#<!?QER9E(18#ZT&8%C007 <'YO`) S
MDR_Q&%!F\Q[!2O\AT 5 9=8<`1%@`_ <86A[]SRS*" P@&4=82_3&\4B0/T;
M!B8>Z"FT+L(BHV\#0!3O8T(AT"GT"%!M,9%5<1SB_V1"!)!G`4IQ8T)&PC[C
M**+?06 %$!@P*;$9@7<OXB-"_QR11>!J%"@@930R(0]A&##W=J,HHDHA:$"!
M(3(JHS.Q_6AS5'*V9=4\LRW%'& +@/YK+\0HHC*@!^ S01D4#W!_);%3L1S3
M?-(VG#AV'L!)]T"%+?()`&][4$+ !' L@_->E'Q"."YK(AE!/Y(R0?]!, 01
M<.H>^#)0'4!0$1DR;W;T?<0(4'\B2$,1!"!5NE T)3<8@&(D&11%4'&Q!" \
M<G<#X$A00#E0X0MP;"YS<'!P!&!%X+TO03X_@$C27 `:!%<9,?]M\1K16( ?
M%C^4@$%K0RBB_UZ4*:% =C7D-L$>P!K!&@3C7I0)<'%U:5DQ<_D^LO^.5VE"
M**(<HP7 /V(9,G_DYS8P&@0HHV5X,>4`<#7 _R,`+,4B42>2<'$\Y7$A-G3'
M7I1K0R%01U!3&@09<O\_91Y1"<$O\2)B***883^ _WSB.I "0#FR+H,VPC.Q
MDC5]'L!!.!$*P)B5!" MH&,_`Y%SQ"6A):$M\BW 8W6_!X!9`4.Q*(1>E .!
M=0= _Q[ 'O@$`$9E+^(Y`R'0.;*3-3)!E%0M7<)S>4%@USE0+9!]Q")OYR)M
M=QIE]QL5!;$<0C\:9@!P/\ B0.$9(TXU6E10P!H92S>N66-1(T*?@'(GP70U
ML?UE0&($\B@@-G$E4%MS-_%)7 !W, # 9D *P'+_B2 RH$D@&G0R,JOW'(0A
M4'\"8*B!.4&)`3ZR03$=8"T#6W--4#4W,#=-0%N((2/0+@&0$3 N!;!G_T<.
M&D9/OE#&LW^IV+>_N)NM&@1$)5"JTEE24B&G]?]3H9_R06 `<!\A2K0$(&Z0
M_TKP!4"P= = !) CT6M#NG3?2I,)\$KPLL"(4#Q.H ,0$8I105145?$P,BYU
M> !M`R ^B? :!!0A``'!@ ,`$! ``````P`1$ (````#`( 0_____T `!S @
MO!T+&RC `4 `"# @O!T+&RC `0L``( (( 8``````, ```````!&``````.%
M`````````P`"@ @@!@``````P ```````$8`````$(4`````````#``6 "" &
M``````# `````````1@````!2A0``MPT```,`"8 (( 8``````, ```````!&
M``````&%`````````'@`B@ @@!@``````P ```````$8`````5(4```$````$
M````."XP``L`)H (( 8``````, ```````!&``````Z%`````````P`G@ @@
M!@``````P ```````$8`````$84`````````#`"F "" &``````# ````````
M1@`````8A0```````!X`.( (( 8``````, ```````!&`````#:%```!````
M`0`````````>`#F "" &``````# `````````1@`````WA0```0````$`````
M`````'@`Z@ @@!@``````P ```````$8`````.(4```$````!`````````!X`
</0`!````!0```%)%.B ``````P`--/TW``!U[X4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

119. [wxsig] Delayed software releases

From: William Beals <will@beals5.com>
Date: Tue, 26 Sep 2000 18:49:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111392-2000.09.26-19.54.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I would like to explain why you have not seen much in the way of software
releases lately. My day job seems to send me off on business trips in
waves. I am in the middle of one of those now. It should be over (and me
recovered from the after-effects) in about three weeks. I then hope to be
able to get around to some more programming. For now I figure the time I
do have is best spent supporting this reflector.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

120. [wxsig] Re: Delayed software releases

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Tue, 26 Sep 2000 20:11:14 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111399-2000.09.26-20.19.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
>
> Folks:
>
> I would like to explain why you have not seen much in the way of software
> releases lately. My day job seems to send me off on business trips in
> waves. I am in the middle of one of those now. It should be over (and me
> recovered from the after-effects) in about three weeks. I then hope to be
> able to get around to some more programming. For now I figure the time I
> do have is best spent supporting this reflector.

being in the process of recovering from a trip to Salt Lake City, and
now wondering when I leave for something again, I fully understand!

73, gerry

--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

121. [wxsig] RE: DS1994

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Tue, 26 Sep 2000 20:18:27 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111400-2000.09.26-20.23.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry for the confustion Will. I meant the DS1994.

Talked to DalSemi and you must be careful NOT TO CHECK the Write Protection
if you want to re-set the time later. I found this out the hard way. I
have a DS1994 that will permanently be 5 minutes off UTC now!

Understand completely about being busy Will. Family and job come first,
programming later.

>Rich:
>
>Need more details. Which clock is "my clock", PCs, DS1994s, or T238s? I'm
>guessing all three. There should be a dozen ways to fix your PC clock and
>if that doesn't work you should be able to set the manual setting mode on
>the Dallas software to select whatever time you want. What may be causing
>you problems is that you can disable the oscillator on the DS1994 in which
>case the clock won't tick. Make sure that checkbox in the options area is
>set correctly.
>
>will
>
>-----Original Message-----
>From: Rich Beckwith [SMTP:wn0x@earthlink.net]
>Sent: Monday, September 25, 2000 9:06 PM
>To: TAPR WX Special Interest Group
>Subject: [wxsig] DS1994
>
>
>Ok, finally got around to programming my DS1994 but had some problems.
>
>My clock is 5 minutes slow and no matter what I do the darn thing won't
>reset to the current time.
>
>Ideas?
>
>Good News - T238 picks up the time (albiet wrong) from the DS1994 every
>time.
>
>
>Rich - Wn0x
>
>
>---
>You are currently subscribed to wxsig as: wmbeals@compuserve.com
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

122. [wxsig] RE: DS1994

From: John Vause <jdv@iglou.com>
Date: Tue, 26 Sep 2000 22:39:12 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111426-2000.09.26-21.48.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you are using the Dallas software to initialize the ds1994 clock be
sure you do NOT check the "Write Protect/Expiration" box especially for
the clock. If you do you will not be able to change whatever function
you "protected".
I found this out the hard way, inadvertently protecting the clock on
my DS1994 from ever being changed again. (Doh!)

William Beals wrote:
>
> Rich:
>
> Need more details. Which clock is "my clock", PCs, DS1994s, or T238s? I'm
> guessing all three. There should be a dozen ways to fix your PC clock and
> if that doesn't work you should be able to set the manual setting mode on
> the Dallas software to select whatever time you want. What may be causing
> you problems is that you can disable the oscillator on the DS1994 in which
> case the clock won't tick. Make sure that checkbox in the options area is
> set correctly.
>
> will
>
> -----Original Message-----
> From: Rich Beckwith [SMTP:wn0x@earthlink.net]
> Sent: Monday, September 25, 2000 9:06 PM
> To: TAPR WX Special Interest Group

> Subject: [wxsig] DS1994
>
> Ok, finally got around to programming my DS1994 but had some problems.
>
> My clock is 5 minutes slow and no matter what I do the darn thing won't
> reset to the current time.
>
> Ideas?
>
> Good News - T238 picks up the time (albiet wrong) from the DS1994 every
> time.
>
> Rich - Wn0x
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>   Name: WINMAIL.DAT
>   WINMAIL.DAT   Type: WordPerfect Document (6.1) File
(application/x-unknown-content-type-WPWin6.1File)
>   Encoding: x-uuencode
>
> ---
> You are currently subscribed to wxsig as: jdv@iglou.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

--
* John Vause KF4ERV jdv@igloudot.com   *
* NOTE: email address altered for benefit of Spambots *
*   AlGore is not worthy.   *
*   No more Gore!   *
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

123. [wxsig] DS 1994 clock chip

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Wed, 27 Sep 2000 21:43:24 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111585-2000.09.27-20.52.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My button arrived today along with the ibutton 'clip' do I just paralell it
up onto the 1 wire bus or is it serial?

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

124. [wxsig] RE: DS 1994 clock chip

From: William Beals <will@beals5.com>
Date: Wed, 27 Sep 2000 20:05:59 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111588-2000.09.27-21.08.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

Parallel. The best thing I've found is a telephone double-adapter. You have to squeeze in the power
connector a bit, but it works nicely.

As you saw on earlier posts today: DON'T SET THE WRITE PROTECTION BIT!!!

will

-----Original Message-----
From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
Sent: Wednesday, September 27, 2000 7:43 PM
To: TAPR WX Special Interest Group

Subject:	[wxsig] DS 1994 clock chip

My button arrived today along with the ibutton 'clip' do I just paralell it
up onto the 1 wire bus or is it serial?

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(@,"`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`?````4D4Z(%MW>'-I
M9UT@1%,@,3DY-"!C;&]C:R!C:&EP``D)`06 `P`.`````T <)`!L`% `%`#L`
M`P!2`0$@@ ,`#@```- '"0`;`!0`! `N``,`1 $!"8 !`"$```!&.#@U,D4T
M,$(Q.31$-#$Q03@U-C P,#!%.#E",T,P.0#[!@$#D 8`M 8``"$````+``(`
M`0````L`(P```````P`F```````+`"D```````,`+@```````P`V``````!
M`#D`@*1II? HP $>`' ``0```!\```!213H@6W=X<VEG72!$4R Q.3DT(&-L
M;V-K(&-H:7 ```(!<0`!````%@`````' */"E8D NA?F4L1'4J%8``.B;/ D`
M`!X`'@P!````!0```%--5% `````'@`?# $````0````=VEL;$!B96%L<S4N
M8V]M``,`!A"W>,/J`P``$&@"```>``@0`0```&4```!-05)+.E!!4D%,3$5,
M5$A%0D535%1(24Y'259%1D]53D1)4T%414Q%4$A/3D5$3U5"3$4M041!4%1%
M4EE/54A!5D543U-1545%6D5)3E1(15!/5T520T].3D5#5$]204))5"Q"````
M``(!"1 !````E0,``)$#``#1! ``3%I&=8&'TYL_``H!`P'W`J0#XP(`8VC!
M"L!S970P(<3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K
M"X!DVC0,8&,`4 L#8P!!"V# ;F<Q,#,S"Z8%T+D*P&LZ"J(*A J 4 K `0=
M;&5L+B @5#!H92!B!Y %0'1HP0N 9R!))W88T (0RG44T" $`"!A&3 88-AE
M<&@"(!C09 A@`F#@92UA9&$%, 20&($:60A@( ]P&<%T;R#D<W$*4&5Z&- +
M@!DQ41C0<&]W!) @!:!N'1L08QS@!< :@&)I=)HL&.!U!4 ?,"!W!;"6:P0@
M`P!C&&!Y+A=*RD$$('D<87-A!^ "(/0@90K ; B1'?$9$ 0@`QS@&\!Y.B!$
M3TX4)U0&`$4CX%1(12 @5U))5"1@4%(B3R2P0U1)([ @0OTDH"$EP!=*`_ 8
M0!=*"O1Y(H S-@% %: !0!$P;X<:H!ZP$'0Q-B M*;+Z3P409PN !T %T >0
M(>#^9QN0*;(71BC$*)$+$RC&8&DM,30T`4 B@#$<.# !0 S0+5-B($;W`V$7
M, R28A;4)- 94!A `P4@!"!;4TU44#JH9S=L`D! ,+,N!:!\;5T712Z !F "
M,"[G5_L)@!L0<R-1'U &8!OA!M Y'C$R-Q]0`= MX" W*#HT,R3033&W5&]9
M+N=4023@)'!8!@!POP60!S$9D (P!) 9`D<#8&QU<#&X&V!J'J$NYUMD=W@`
MD&==(Y %\#'8.3DT'E)`&,OH]@_P4@*U\L:B@4"[874PKC"H#\37D?8AS@
M`Z *P 40&<#_&C C,QIP"0`9<0/P&4 =L]II/U4G.Q %("<;,1F0^"!J=1D1
M"K$'0!A@`R"_'S 71#A@(A$<X1W",4#Q_PEP'V$$(6Q&E$?L0^@!R(./Q=*
M+WL?4$<W3%0`5"]+0S)%3DF?%T0'PAQ0%Q ?4$Y9*: _.K!*8!8P%T0M<$)@
M-#40+C<X,25P,#<SH4)@-30N- ' 5Q=$@F@"0' Z+R]W36#^+C$7)OX7ABLG
M'%(*P!C0_F,(< EP`C @@!T`&V $\E\8\$ B'] Z,AIP<R. =],T$0= <T Q
M<7!"X 20]QG 3?@U\" :$%%G1B$:(?\?`17A+Z T``MP`R <X1A031RA+3HC
M+4 U-TO03;9 (H B\2X!D!$P+@6P%F<72A'Q`%H``````P`0$ `````#`!$0
M``````,`@!#_____0 `'," =I7GP*, !0 `(," =I7GP*, !"P``@ @@!@``
M````P ```````$8``````X4````````#``* "" &``````# ````````1@``
M```0A0````````,`!8 ((8``````, ```````!&`````%*%``"W#0```P`)
M@ @@!@``````P ```````$8``````84````````>`"* "" &``````# ````
M````1@````!@```!4A0```0````0````X+C `"P`F@ @@!@``````P ```````$8`
M````#H4````````#`"> "" &``````# ````````1@`````1A0````````,`
M*8 ((8``````, ```````!&`````!B%````````'@`X@ @@!@``````P ``
M`````$8`````-H4```$````!`````````!X`.8 ((8``````, ```````!&
M`````#>%```!`````0`````````>`#J "" &``````# ````````1@`````X
MA0```0````$`````````'@`]``$````%````4D4Z(`````#``TT_3<``"J'
`
end

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

125. [wxsig] RE: DS1994

From: William Beals <will@beals5.com>
Date: Wed, 27 Sep 2000 18:50:32 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111589-2000.09.27-21.08.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Once protected it can never ever be unprotected?? That is scary!

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Tuesday, September 26, 2000 7:18 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: DS1994

Sorry for the confustion Will. I meant the DS1994.

Talked to DalSemi and you must be careful NOT TO CHECK the Write Protection
if you want to re-set the time later. I found this out the hard way. I
have a DS1994 that will permanently be 5 minutes off UTC now!


```
begin 600 WINMAIL.DAT
M>)\^(@,"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`7````4D4Z(%MW>'-I
M9UT@4D4Z($13,3DY- !:!@$%@ ,`#@```- '"0`;`!(`,@`@``,`8@$!(( #
M``X```#0!PD`&P`2`#$`.P`#'P!`0F `0`A````.$,Q,$)$,#=!-CDT1#0Q
M,4$X-38P,# P13@Y0C-#,#D``@<!`Y &`+0%```A````"P`"```$````+`",`
M``````,`)@``````"P`I```````#`"X```````,`-@``````0 `Y`$"%*QOF
M*, !'@!P``$````7````4D4Z(%MW>'-I9UT@4D4Z($13,3DY- ```@%Q``$`
M```6`````< HYALK![T0C92F$=2H5@``Z)L\"0```@`>#  $````%````4TU4
M4 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&$%0VL>T#``<0
MH $``!X`"! !````90```%))0T@Z3TY#15!23U1%0U1%1$E40T%.3D5615)%
M5D520D553E!23U1%0U1%1#\_5$A!5$E34T-!4EE724Q,+2TM+2U/4DE'24Y!
M3$U%4U-!1T4M+2TM+4923TTZ4DE#2$)%0TL``````@$)$ $```"@`@``G (`
M`*\#``!,6D9U1*19/C\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"@T,`4 [F
M<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@8P!0"P-C`$$+
M8,!N9S$P,S,+I@?P.FD/8#H*H@J$"H!/;LAC92 1,&]T!9 8@"AD(&D%0&,#
MD6YE*G8$D" 9<V(8,'5NP1A7/S\@(%0/< 5 S00`( 3P"L!Y(1=*`_ .; E0
M%UD*]&QI,S8?`4 5H % &%40=#$V(.HM'])/!1!G"X '0 70X0>0<V%G91_3
M%T889 <>L0L3'N9I+3$T-.,!0!XP,3@P`4 ,T"-SN&(@1@-A%S ,DF(6U%0@
M0@60:P/P="7 6T!33510.G<*`'@<0&4*P"9 'C!N:R[Y&6!T71=%)* &8 (P
M)0>"5 I0<V1A>2P&4<T%,&4&T!F1,C8IT '0$20`(#<Z(^ @4$T)* =4;RC8
M05!2(#176 8`< 60!S$@22\", 20!Y %0$<#8'5P,2@(=6)J&)$E!UMW$G@`
MD&==!_!%.B#@1%,Q.3D4\"&/(IG?'C0+MA=3"N,*@%,%L!O@/B "$ 7 )D 8
M, 6@;F:Z=2XP:0(@+1 <X2X;$'Q)( > `' %0#5R,00NE1=*5 = :QC!=&\P
M\&,'0 9@;6D@`' 8T'F_"& VX#7Q&@(;P0$0=0,@"$Y/5!L@3R!#2.A%0TLU
M8U<%$!B *V#?&&0V(1=$!I Z$W<W$SE O0EP+0^A-6,V$ > ( M@WRWQ-J,"
M$!I .1%H&X$(8.\W- ]Q&- ^0'DVHA=$#W#_&8 YT##U-6$;41S2&$ $D-L#
M@2BA;#40&A$U-N +@ M!( >1;P$@(%540[D94&]W' L71!'Q`$?@`P`0$ ``
M```#`!$0`0````,`@!#_____0 ``,, 50P?F*, !0 `(,, 50P?F*, !"P``
M@ @@!@``````P `````````$8``````X4````````#``* "" &``````# ````
M````1@`````0A0````````,`!8 (( 8``````, ```````!&`````%*%``"W
M#0```P`)@ @@!@``````P `````````$8``````84````````>`"* "" &````
M``# ````````1@`````!4A0```0````0````X+C `"P`F@ @@!@``````P ``
M`````$8`````#H4````````#`"> "" &``````# ````````1@`````1A0``
M``````,`*8 (( 8``````, ```````!&`````!B%````````'@`X@ @@!@``
M````P ```````$8`````-H4```$````!``````````!X`.8 (( 8``````, `
M``````!&`````#>%```!`````0``````````>`#J "" &``````# ````````
M1@`````XA0```0````$`````````'@`]``$````%````4D4Z( `````#``TT
&_3<``/,M
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

126. [wxsig] RE: DS 1994 clock chip

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Wed, 27 Sep 2000 22:08:41 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111592-2000.09.27-21.17.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

when you say "clip" are you talking about the iButton "blue dot" adapter
with RJ11 on it or are you talking about the holder that is a PC Board
mount similar to the thingy that is used on PC motherboards to hold
batteries? If it is the latter, just solder it down on the prototyping
area and run two "blue wire" patches to 1-wire bus and gnd.

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of William Beals
> Sent: Wednesday, September 27, 2000 10:06 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: DS 1994 clock chip
>
>
> Mark:
>
> Parallel. The best thing I've found is a telephone
> double-adapter. You have to squeeze in the power connector a
> bit, but it works nicely.
>
> As you saw on earlier posts today: DON'T SET THE WRITE
> PROTECTION BIT!!!
>
> will
>
> -----Original Message-----
> From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> Sent: Wednesday, September 27, 2000 7:43 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] DS 1994 clock chip
>
>
> My button arrived today along with the ibutton 'clip' do I
> just paralell it
> up onto the 1 wire bus or is it serial?
>
> Mark Phillips, G7LTT/KC2ENI
> New York, NY - 11103
> 40' 45.781N 073' 54.472W
> http://www.g7ltt.com
>
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

127. [wxsig] Re: DS 1994 clock chip

From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 27 Sep 2000 20:02:03 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111595-2000.09.27-21.31.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You just connect it across the 1-Wire bus with the case part of the DS1994
being ground. The top button part is the data side.

Russ
kb0tvj

----- Original Message -----
From: Mark Phillips <g7ltt@g7ltt.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Wednesday, September 27, 2000 7:43 PM
Subject: [wxsig] DS 1994 clock chip

> My button arrived today along with the ibutton 'clip' do I just paralell
it
> up onto the 1 wire bus or is it serial?
>
> Mark Phillips, G7LTT/KC2ENI
> New York, NY - 11103
> 40' 45.781N 073' 54.472W
> http://www.g7ltt.com
>
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

128. [wxsig] RE: DS 1994 clock chip

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Thu, 28 Sep 2000 06:03:29 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111637-2000.09.28-05.15.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The 'clip' looks like the motherboard battery holder. Have you noticed that
the button will only fit into the clip upside down which then causes a
conflict in the wiring standard? The legend on the clip says that the
contact at the top of the clip is + and bottom is - flying in the face of
the button legend.

----- Original Message -----
From: "Brian B. Riley" <brianbr@wulfden.org>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, September 27, 2000 10:08 PM
Subject: [wxsig] RE: DS 1994 clock chip

>
> when you say "clip" are you talking about the iButton "blue dot" adapter
> with RJ11 on it or are you talking about the holder that is a PC Board
> mount similar to the thingy that is used on PC motherboards to hold
> batteries? If it is the latter, just solder it down on the prototyping
> area and run two "blue wire" patches to 1-wire bus and gnd.
>
> > -----Original Message-----
> > From: bounce-wxsig-15705@lists.tapr.org
> > [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of William Beals
> > Sent: Wednesday, September 27, 2000 10:06 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] RE: DS 1994 clock chip
> >
> >
> > Mark:
> >
> > Parallel. The best thing I've found is a telephone
> > double-adapter. You have to squeeze in the power connector a
> > bit, but it works nicely.
> >
> > As you saw on earlier posts today: DON'T SET THE WRITE
> > PROTECTION BIT!!!
> >
> > will
> >
> > -----Original Message-----
> > From: Mark Phillips [SMTP:g7ltt@g7ltt.com]

> > Sent: Wednesday, September 27, 2000 7:43 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] DS 1994 clock chip
> >
> >
> > My button arrived today along with the ibutton 'clip' do I
> > just paralell it
> > up onto the 1 wire bus or is it serial?
> >
> > Mark Phillips, G7LTT/KC2ENI
> > New York, NY - 11103
> > 40' 45.781N 073' 54.472W
> > http://www.g7ltt.com
> >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

129. [wxsig] APRSWXNET info

From: "Russ Chadwick" <crb5@uswest.net>
Date: Thu, 28 Sep 2000 07:09:27 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111644-2000.09.28-08.17.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I made some changes, corrected some errors, and added two new stations to
APRSWXNET, which now has 8 stations. The changes I make on findu.com (to
send the data) happen quickly. However, the changes to QCMS (to receive the
data) happen much slower and should happen in the next day or so. When our
symbols on the maps change from lower case to upper case, the change has
taken place. So, for example, when my station near Denver changes from
"ap001" to "AP001", that means the changes are in place. Henceforth, the
stations will be in this upper case format. That's one of the changes that
the QCMS people asked for.

Another change is that I took all of the position locations from findu.com.
That way there is a common source of the location data. So anyone wishing
to join this activity of monitoring the quality of your weather station
data, just send me your callsign and I'll include you in the next change
which will be in about a week.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

130. [wxsig] RE: DS 1994 clock chip

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 28 Sep 2000 11:12:10 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111670-2000.09.28-11.17.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yup, the clip is backwards. I don't know if other I-Button devices are the reverse of this but it is confusing. I wired my DS1994 backwards the first time because I assumed + to be the data side. For those of you who have the I-Button holder, there is a ground connection near the break-out grid that is handy, and you can take your 1-Wire bus input from pin 14 of J6. Be careful when you are counting pins as J6 is not numbered the same as a DIP package.

DO NOT check the write protection when setting the time on the DS1994 as you will NEVER be able to

change that function again.

It is really cool being able to grab the time from this device. I could have set up a 9 volt battery as a backup, and still may, but this is a nice way not to have to reset the time when you have completely powered off.

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

131. [wxsig] Intermittent Data Tx

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 28 Sep 2000 11:18:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111671-2000.09.28-11.23.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

I am still working on the intermittent problem with my station not reporting. I verified that the computer port was getting the information. When I hooked up to the TNC port and ran it's output to another terminal session nothing would show up. After re-setting the T238 I would see data again.
Is the output to the PC parallel with the TNC? Does it run from a different port on the MAX232? I reseated the MAX232 and checked my solder connections in the area and so far this morning I am still reporting data. I have everything in place now to check the TNC port if it quits again and will let you know what I find.

Rich - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

132. [wxsig] RE: Intermittent Data Tx

From: William Beals <will@beals5.com>
Date: Thu, 28 Sep 2000 19:15:30 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111754-2000.09.28-20.27.56--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Exactly the same signals go to to the TNC and PC ports. The only difference is the sex of the connector and swapping the Tx and Rx pins. That only purpose behind having two ports is to save a needed adapter and having half of the users suggesting I chose the wrong one! As such, keep in mind that you should not plug both a PC and TNC in at the same time. You'd end up shorting a few RS-232 signals together.

Lemme know what you find out. The fact that you don't see the data dissapear coming out of the T238 is encouraging.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Thursday, September 28, 2000 10:18 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Intermittent Data Tx

Will,

I am still working on the intermittent problem with my station not reporting. I verified that the computer port was getting the information. When I hooked up to the TNC port and ran it's output to another terminal session nothing would show up. After re-setting the T238 I would see data again.
Is the output to the PC parallel with the TNC? Does it run from a different port on the MAX232? I reseated the MAX232 and checked my solder connections in the area and so far this morning I am still reporting data. I have everything in place now to check the TNC port if it quits again and will let you know what I find.

Rich - Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(A8!`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`A````4D4Z(%MW>'-I
M9UT@26YT97)M:71T96YT($1A=&$@5'@`B L!!8 #``X```#0!PD`' `3``\`
M'@`$`$ !`2" `P`.````T <)`!P`$P`,``<`! `F`0$)@ $`(0```$$U0S<R
M-#0X-S$Y-40T,3%!.#4V,# P,$4X.4(S0S Y`.T&`0.0!@!0" ``(0````L`
M`@`!`````"P`C```````#`"8```````L`*0```````P`N```````#`#8`````
M`$ `.0``FNS!LBG `1X`< `!````(0```%)%.B!;=WAS:6==($EN=&5R;6ET
M=&5N="!$871A(%1X``````(!<0`!````%@`````' *;+!VT@DQZ:5<1'4J%8`
M`.B;/ D``!X``@P!````!0```%--5% `````'@`?# $````0````=VEL;$!B
M96%L<S4N8V]M``,`!A#G176K`P`'$+@$```>``@0`0```&4```!224-(.D58
M04-43%E42$5304U%4TE'3D%,4T=/5$]43U1(151.0T%.1%!#4$]25%-42$5/
M3DQ91$E&1D5214Y#14E35$A%4T583T942$5#3TY.14-43U)!3D135T%04$E.
M1U1(``````(!"1 !````, 4``"P%``"_!P``3%I&=8Y"0V4_``H!`P'W`J0#
MXP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/YGT3"H (R" ["6\R-35+`H *
M@78(D'=K"X!DVC0,8&,`4 L#8P!!"V# ;F<Q,#,S"Z8'\#II#V Z"J(*A J
M17@!`-!T;'D@=&AE&"!S80> &+!I9VYS!T $(&=O&' 9I!B15(A.0R `<&0@
M4!J XG )$7,N(!I0&)$"(+48460&D&8$D GP8QB@TP0`&'1E>!O 9AAS!:!\
M;FX%D!G !< :H@/@871P< N 9QH4'6 :HE*W'6 ?$1M4805 &]-P"'!#&Q /
MH"!B96@4P2#W#W 4<!\R=QF@&Q,<PQF@Y1C =AB@82 >( F "8#U&I!D'O!T
M!) :DR)%#W!V;!V0'85U#Z /D!BP=51G9P>0=!\B21W@:#LADAB"=P-@'S$"
M(&4AC1MP02;"#V L(&L)X'9P', #H&TB`AB (-%Y)PA@&+ GP'5L&L!N;]\%
M0 M0)O AP"N :"/Q&N'_&J(:8BGQ(-$8AR= !X ;8;I9"& G&L )\!K =2G0
M/RL!`" ?(B0`'% 'X5,M?#(S$6 9%AG )Q 8@7*B+A=*3&5M&.%K*W"U!^!W
M*H9F(@((8'0;9=9F&"$J:&0"("<%0 ^@OR?T)* !D!P1!! >\&4*P5\%H"HA
M*)$T(!UV5#!P..<<PAR!"&%A9Q\A,;L#\ YL"5 760KT;&DS-G\!0!6@`4 1
M,"N 'C$0=#'H-B M/8)/!1 Y<0= _P70!Y 8P"<0/8,71CR4/&&#"Q,\EFDM
M,30T`4!Q.^ Q.# !0 S002-B7"!&`V$7, R28A;4(!I"!9!K`_ L(5M338A4
M4#H6\D!D<!M0KR<P(- N0 1@+B: 71=%OT)0!F ",$*W&Y (<',DH#YY*8 &
M8"3!!M DX3(XURF `=!!L" 6(#I!D _@$DU%UU1O1JA!4%+8(%=8!@`W$&,'
M,2> YP(P'&$G,"!'`V O($78&'5B:AXQ0K=;=W@]&1%=2[0J( ) 1G$@1/\V
M@A^@/R] .COD"[874PKC_0J 5SJ1*8 72B>0&- 8L/\G0#J@*$ %L!2Q*)(8
M<PN OT[9/($"8#*0*$!#XFT88/U%$FE5L2MR"7 ;$CF"&W"_)Y CT :!") J
M51VT;2%0]R32&Q(H0&$9<0^P)T-5Y.\"$$[P6!,;85<8D .@)Y#])\!O*: O
M`QGY6T,:HCE0^P.@0^ G!" T$5KA&;(`</\L$23A3M,^(@^@!!!8-2'Q?Q]
M(L K,BL!!^ O(!MA0?<!@"3A"7 M#Z%<!SB#)Y"_8P4V`39S.6 +<3&U21SD
M_V!8&((:X@K !T!7,%410^+E&B4_&W!$;P>10^!8H/YU`Z #4B/Q'"8KD5M2
M5;7X34%8,'%J02>03 $W(/\DT"I2;.8:DP]@0Z$D85?"_P;P!($=YE@Q(S%5
MQ K -R#_'H09H#2P85$A\ 0@!& $H'\G5%2G6+<V8UE#(D$8H&7]69%Y8J0I
M\0M1'*$R\AG!SV\S7JP&D&JR<75#X 0@]V:S&I,Z@B!7,"JD,N@GD/<SPC&[
M0T,M2P`*`$_G?3[_/O<N@7%R'> (<&OR&%$FX'YB!/(AT"I1&:!.0QJ0<^XZ
M*$!((1E10%JS)I$CT/XN-V$71$H0)G `@(!6'3'_&K$D``)@`'!W<#*0"W #
M(#<9P5<P(\$M3D-!$#4W\# W34 [X"<P&U !D+41,"X%L&<72A'Q`(C@`P`0
M$ `````#`!$0``````,`@!#_____0 ``,& +_DBR*< !0 `(,& +_DBR*< !
M"P``@ @@!@``````P ```````$8``````X4````````#``* "" &``````#
M````````1@`````0A0````````,`!8 (( 8``````, ````````!&`````%*%
M``"W#0```P`)@ @@!@``````P ```````$8``````84````````>`"* "" &
M``````# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````
MP ```````$8`````#H4````````#`"> "" &``````# ````````1@`````1
MA0````````,`*8 (( 8``````, ````````!&`````!B%````````'@`X@ @@
M!@``````P ```````$8`````-H4```$````!`````````!X`.8 (( 8``````
M`, ````````!&`````#>%```!`````0`````````>`#J "" &``````# ````
M````1@`````XA0```0````$`````````'@`]``$````%````4D4Z( `````#
)``TT_3<``*@N
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

133. [wxsig] RE: Intermittent Data Tx

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Fri, 29 Sep 2000 08:43:29 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-111805-2000.09.29-08.49.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I will double check my connections and my soldering. Thanks Will.

>>> will@beals5.com 09/28/00 08:15PM >>>
Rich:

Exactly the same signals go to to the TNC and PC ports. The only
difference is the sex of the connector and swapping the Tx and Rx pins....

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

134. [wxsig] [Fwd: [weather] 1-Wire Wind Instrument]

From: calfano <calfano@worldnet.att.net>
Date: Sat, 30 Sep 2000 07:19:11 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-112014-2000.09.30-06.28.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just received this and thought all you folks would be interested...

Charlie
WA2GUG

> Aitor Arrieta wrote:
>
> Hi To All,
>
> My name is Aitor Arrieta Galarraga and I am CEO of a Mexican Company
> named Automatizacion Aplicada a Gasolineras (AAG).   I have been
> listening to the weather interest group for some time. Our company is
> mainly dedicated to developing high technology products and special
> engineering projects. We have being users of Dallas Semiconductor
> 1-wire technology for the past five years with excellent results. We
> have developed Gasoline Station automation systems, vehicle tracking
> systems, hub odometers, etc.
>
> As an electronic engineer and a ham radio operator (XE1YAW), I have
> followed the evolution of the 1-Wire weather station with keen
> interest. (I have one of the first commemorative stations installed at
> my ham radio antenna), and I saw with disapointment the withdrawal of
> the 1-Wire aeometer from the Dallas Semi webstore.
>
> So, following the same schematics and specifications made public by
> Dallas Semi, we start the production of a first run of 1-Wire wind
> instruments. The first units will begin shipping 23 October. We are
> puting everything together for our new web site to offer the 1-Wire
> based instruments for the weather station. These instruments will be
> produced with chips we buy from Dallas Semi. It is our intention to
> manufacture instruments hardware and software compatible with the
> orginal Dallas design and to make them available to everybody for
> $79USD. I will send the URL of our web site as it goes on line in
> October. I will also monitor weather@iButton.com
> <mailto:weather@iButton.com> to help those who want to deploy weather
> instruments using the 1-Wire network.
> Thank you for you time
> Best Regards
> Aitor Arrieta G.
> Automatizacion Aplicada a Gasolineras S.A. de C.V.
> Lat.20º35'11''N, Lng.100º24'12''W
[Attachment: calfano.vcf; text/x-vcard; 156 bytes]
[Attachment: smime.p7s; application/x-pkcs7-signature; 2,782 bytes]

135. [wxsig] RE: [Fwd: [weather] 1-Wire Wind Instrument]

From: William Beals <will@beals5.com>
Date: Sat, 30 Sep 2000 08:00:16 -0600

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-112037-2000.09.30-09.20.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

All:

This is way cool! Maybe some of those rumors of new and compatible weather stations are finally going to come true!
I wish there were an email address or something so we could show him how to REALLY do it with ham radio.

will


```
begin 600 WINMAIL.DAT
M>)\^(BP.`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, ,````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````V-D`02 `0`T````4D4Z(%MW>'-I
M9UT@6T9W9#H@6W=E871H97)=(#$M5VER92!7:6YD($EN<W1R=6UE;G1=`/81
M`06 `P`.````T <)`!X`" ```! `!@`<`0$@@ ,`#@```- '"0`>``@````0
M``8`' $!"8 !`"$````Q-T4U-3,Y1D$V.39$-#$Q03@U-C P,#!%.#E",T,P
M.0`$!P$#D 8`C 0``"$````+``(``0````L`(P```````P`F```````+`"D`
M``````,`+@```````P`V``````! `#D`8 3.PN8JP $>`' ``0```#0```!2
M13H@6W=X<VEG72!;1G=D.B!;=V5A=&AE<ET@,2U7:7)E(%=I;F0@26YS=')U
M;65N=%T``@%Q``$````6`````< JYG2HGU/E&):F$=2H5@``Z)L\"0```@`>
M# $````%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT`
M`P`&$%N CI8#``<0MP```!X`"! !````90```$%,3#I42$E325-705E#3T],
M34%90D533TU%3T942$]315)534]24T]&3D5704Y$0T]-4$%424),15=%051(
M15)35$%424].4T%2149)3D%,3%E'3TE.1U1/0T]-1512545)5TD``````@$)
M$ $```!9`0``50$``*L!``!,6D9U_8V(& ,`"@!R8W!G,3(U/C(`] 'W`J0#
MXP(`8VC!"L!S970P( <3`H!F?0J ",@@.PEO#C U2P* "H%V")!W:PN 9-HT
M#&!C`% +`V,`00M@8FX.$# S,PNF$*!LG&PZ"J(*A J 5&@$`,(@%T%W87D@
M!: &\ PA( 70%[!B92!S`P-P&)!O9B!T:&]Q$& @<G4$8!!0&/)N*P?1`'!D
M%]%M"K!T:=,"8!B0=V4:\&@$D!B@OP&0&P`"( 0@"L 8D&8+@*4'0&P7P&=O
M"X!G&2"6;QJB&)!T&9!E(19D]DD7D 0`:!DA!) ;0AR!C0.190# `Q%A9&0)
M</\$$06Q&+(9,!U2&+ ;41?1;'5L&I ?`&\'X!<P;0<BP"*A'9%214%,3.A9
M(&0=H&D%0 /P&3"U(L!A(O!R(' <("X6:E\#\!8P%FH69!$A`">@`````P`0
M$ `````#`!$0``````,`@!#_____0 ``,$ V@T?F*L !0 `(,& $SL+F*L !
M"P``@ @@!@``````P ```````$8`````X4````````#``* "" &`````#
M````````1@`````0A0````````,`!8 (( 8``````, ```````!&`````%*%
M``"W#0```P`)@ @@!@``````P ```````$8``````84````````>`"* "" &
M``````# ````````1@````!4A0```0```0````X+C `"P`F@ @@!@``````
MP ```````$8`````#H4````````#`"> "" &`````# ````````1@`````1
MA0````````,`*8 (( 8``````, ```````!&`````!B%````````'@`X@ @@
M!@``````P ```````$8`````-H4```$````!`````````!X`.8 (( 8`````
M`, ```````!&`````#>%```!`````0`````````>`#J "" &``````# ````
M````1@``````XA0```0````$`````````'@`]``$````%````4D4Z( `````#
)``TT_3<``#/B
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

136. [wxsig] RE: [Fwd: [weather] 1-Wire Wind Instrument]

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sat, 30 Sep 2000 10:23:08 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-112041-2000.09.30-10.31.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
>
> All:
>
> This is way cool! Maybe some of those rumors of new and compatible weather stations are finally going
 to come true!
> I wish there were an email address or something so we could show him how to REALLY do it with ham
radio.

How about this...
http://www.ibutton.com/connections/catalogs/aag.html
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

October 2000

Original source file: wxsig.0010
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0010

1. [wxsig] Re: [Fwd: [weather] 1-Wire Wind Instrument]

From: "John Taylor, KC2JO" <kc2jo@brick.net>
Date: Mon, 2 Oct 2000 07:39:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-112371-2000.10.02-07.48.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I dont care to recieve any messages where I have to download a 229k file
just to see the message. Why send a digital signed message to a sig? This
one is now in my message rule so I wont see anymore of these .

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] RE: wxsig digest: September 30, 2000

From: "Alan Mitchell" <amitchell@gci.net>
Date: Tue, 3 Oct 2000 07:35:38 -0800
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-112594-2000.10.03-10.44.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes, the return of the $79 weather station...

Alan Mitchell
Analysis North
Tools for Energy and HVAC Professionals
http://www.energytools.com

-----Original Message-----
From: TAPR WX Special Interest Group digest (by way of Richard Dowling
<rpd@gci.net>) [mailto:wxsig@lists.tapr.org]
Sent: Monday, October 02, 2000 9:35 PM
To: amitchell@gci.net; amitchell@gci.com
Subject: wxsig digest: September 30, 2000

Alan, Good news if true...if true...if true, etc. RPD

TAPR WX Special Interest Group Digest for Saturday, September 30, 2000.

1. [Fwd: [weather] 1-Wire Wind Instrument]
2. RE: [Fwd: [weather] 1-Wire Wind Instrument]
3. RE: [Fwd: [weather] 1-Wire Wind Instrument]

Subject: [Fwd: [weather] 1-Wire Wind Instrument]
From: calfano <calfano@worldnet.att.net>
Date: Sat, 30 Sep 2000 07:19:11 -0400
X-Message-Number: 1

This is a cryptographically signed message in MIME format.

--------------ms941D451F698E6E54F167359F
Content-Type: multipart/mixed;
  boundary="------------784F0A66F0113C51422FC693"

This is a multi-part message in MIME format.
--------------784F0A66F0113C51422FC693
Content-Type: text/plain; charset=iso-8859-1
Content-Transfer-Encoding: 8bit

I just received this and thought all you folks would be interested...

Charlie
WA2GUG

 > Aitor Arrieta wrote:

```
 >
 > Hi To All,
 >
 > My name is Aitor Arrieta Galarraga and I am CEO of a Mexican Company
 > named Automatizacion Aplicada a Gasolineras (AAG).   I have been
 > listening to the weather interest group for some time. Our company is
 > mainly dedicated to developing high technology products and special
 > engineering projects. We have being users of Dallas Semiconductor
 > 1-wire technology for the past five years with excellent results. We
 > have developed Gasoline Station automation systems, vehicle tracking
 > systems, hub odometers, etc.
 >
 > As an electronic engineer and a ham radio operator (XE1YAW), I  have
 > followed the evolution of the 1-Wire weather station with keen
 > interest. (I have one of the first commemorative stations installed at
 > my ham radio antenna), and I saw with disapointment the withdrawal of
 > the 1-Wire aeometer from the Dallas Semi webstore.
 >
 > So,  following the same schematics and specifications made public by
 > Dallas Semi, we start the production of a first run of 1-Wire wind
 > instruments. The first units will begin shipping 23 October. We are
 > puting everything together  for our new  web site  to offer the 1-Wire
 > based instruments for the weather station.  These instruments will be
 > produced with chips  we buy from Dallas Semi. It is our intention to
 > manufacture instruments hardware and software compatible with the
 > orginal Dallas design and to make them available to everybody for
 > $79USD. I will send the URL of our web site as it goes on line in
 > October. I will also monitor  weather@iButton.com
 > <mailto:weather@iButton.com>  to help those who want to deploy weather
 > instruments using the 1-Wire network.
 > Thank you for you time
 > Best Regards
 > Aitor Arrieta G.
 > Automatizacion Aplicada a Gasolineras S.A. de C.V.
 > Lat.20º35'11''N, Lng.100º24'12''W
--------------784F0A66F0113C51422FC693
Content-Type: text/x-vcard; charset=us-ascii;
  name="calfano.vcf"
Content-Transfer-Encoding: 7bit
Content-Description: Card for calfano
Content-Disposition: attachment;
  filename="calfano.vcf"

begin:vcard
n:Alfano;Charles
x-mozilla-html:FALSE
adr:;;;;;;
version:2.1
email;internet:calfano@worldnet.att.net
title:Communications Specialist
end:vcard

--------------784F0A66F0113C51422FC693--

--------------ms941D451F698E6E54F167359F
Content-Type: application/x-pkcs7-signature; name="smime.p7s"
Content-Transfer-Encoding: base64
Content-Disposition: attachment; filename="smime.p7s"
Content-Description: S/MIME Cryptographic Signature

MIIK2gYJKoZIhvcNAQcCoIIKyzCCCscCAQExCzAJBgUrDgMCGgUAMAsGCSqGSIb3DQEHAaCC
CGYwggUwMIIEmaADAgECAhAxJFj1NXt7O0a3laKzDxLgMA0GCSqGSIb3DQEBBAUAMIHMMRcw
FQYDVQQKEw5WZXJpU2lnbiwgSW5jLjEfMB0GA1UECxMWVmVyaVNpZ24gVHJ1c3QgTmV0d29y
azFGMEQGA1UECxM9d3d3LnZlcmlzaWduLmNvbS9yZXBvc2l0b3J5L1JQQSBJbmNvcnAuIEJ5
IFJlZi4sTElBQi5MVEQoYyk5ODFIMEYGA1UEAxM/VmVyaVNpZ24gQ2xhc3MgMSBDQSBJbmRp
dmlkdWFsIFN1YnNjcmliZXItUGVyc29uYSBOb3QgVmFsaWRhdGVkMB4XDTAwMDQxMzAwMDAw
MFoXDTAxMDQyNzIzNTk1OVowggEZMRcwFQYDVQQKEw5WZXJpU2lnbiwgSW5jLjEfMB0GA1UE
CxMWVmVyaVNpZ24gVHJ1c3QgTmV0d29yazFGMEQGA1UECxM9d3d3LnZlcmlzaWduLmNvbS9y
ZXBvc2l0b3J5L1JQQSBJbmNvcnAuIGJ5IFJlZi4sTElBQi5MVEQoYyk5ODEeMBwGA1UECxMV
UGVyc29uYSBOb3QgVmFsaWRhdGVkMTMwMQYDVQQLEypEaWdpdGFsIEIElEIENsYXNzIDEgLSBO
ZXRzY2FwZSBGdWxsIFNlcnZpY2UxFzAVBgNVBAMUDmNoYXJsZXMgYWxmYW5vMScwJQYJKoZI
hvcNAQkBFhhjYWxmYW5vQHdvcmxkbmV0LmF0dC5uZXQwgZ8wDQYJKoZIhvcNAQEBBQADgY0A
MIGJAoGBAJQjnHSa0M2+u1q70sLU4jX4X0sDtFYcABJsFRSFul2bFbI5a4oLM21ZwkufN7DZ
LPBLkIiRBek7WQZtg+7ybNSXx6mUeC5XadC19+9t+8qme54fKOzZJWyIxHhU0OSbs79fmi0g
WG+zobV1g82zym4nWdLyRo0I6Rnr2ZD8Mzs3AgMBAAGjggHBMIIBvTAJBgNVHRMEAjAAMIGs
BgNVHSAEgaQwgaEwgZ4GC2CGSAGG+EUBBwEBMIGOMCgGCCsGAQUFBwIBFhxodHRwczovL3d3
dy52ZXJpc2lnbi5jb20vQ1BTMGIGCCsGAQUFBwICMFYwFRYOVmVyaVNpZ24sIEluYy4wAwIB
ARo9VmVyaVNpZ24ncyBDUFMgaW5jb3JwLiBieSByZWZlcmVuY2UgbGlhYi4gbHRkLiAoYyk5
NyBWZXJpU2lnbjARBglghkgBhvhCAQEEBAMCB4AwgYYGCmCGSAGG+EUBBgMEeBZ2ZDQ2NTJi
```

ZDYzZjIwNDcwMjkyOTg3NjNjOWQyZjI3NTA2OWM3MzU5YmVkMWIwNTlkYTc1YmM0YmM5NzAx
NzQ3ZGE1ZDNmMjE0MWJlYWRiMmJkMmU4OTIxN2FjNjhmNGQzMTE0OTk2YTNiYTQ2ZjVmM2Vh
NDUwYzAwBgpghkgBhvhFAQYHBCIWIDExZmY2ZWY1MmI1NDRhYjQwZjI1N2Q1NjcwOTE4ZjU3
MDMGA1UdHwQsMCowKKAmoCSGImh0dHA6Ly9jcmwudmVyaXNpZ24uY29tL2NsYXNzMS5jcmww
DQYJKoZIhvcNAQEEBQADgYEASM0s+AMCCmeaxKgjSMEdfX/GRCh64JsiURxq3WIL+di+uuqf
xmN0dUbjUPX2IqAEW86QeIrpBPfUM83EuZV7zulC4BcCqTkpWip1sRMCcFr0iJpat93aUSd3
XDjngA8ZaBqyivgpScKDCmVvIWtq66Zg4XIN+MKwUnZOw5fY/MYwggMuMIICl6ADAgECAhEA
0nYujRQMPX2yqCVdr+4NdTANBgkqhkiG9w0BAQIFADBfMQswCQYDVQQGEwJVUzEXMBUGA1UE
ChMOVmVyaVNpZ24sIEluYy4xNzA1BgNVBAsTLkNsYXNzIDEgUHVibGljIFByaW1hcnkgQ2Vy
dGlmaWNhdGlvbiBBdXRob3JpdHkwHhcNOTgwNTEyMDAwMDAwWhcNMDgwNTEyMjM1OTU5WjCB
zDEXMBUGA1UEChMOVmVyaVNpZ24sIEluYy4xHzAdBgNVBAsTFlZlcmlTaWduIFRydXN0IE5l
dHdvcmsxRjBEBgNVBAsTPXd3dy52ZXJpc2lnbi5jb20vcmVwb3NpdG9yeS9SUEEgSW5jb3Jw
LiBCeSBSZWYuLExJQUIuTFREKGMpOTgxSDBGBgNVBAMTP1ZlcmlTaWduIENsYXNzIDEgQ0Eg
SW5kaXZpZHVhbCBTdWJzY3JpYmVyLVBlcnNvbmEgTm90IFZhbGlkYXRlZDBnzANBgkqhkiG
9w0BAQEFAAOBjQAwgYkCgYEAu1pEigQWu1X9A3qKLZRPFXg2uA1Ksm+cVL+86HcqnbnwaLuV
2TFBcHqBS7lIE1YtxwjhhEKrwKKSq0RcqkLwgg4C6S/7wju7vsknCl22sDZCM7VuVIhPh0q/
Gdr5FegPh7Yc48zGmo5/aiSS4/zgZbqnsX7vyds3ashKyAkG5JkCAwEAAaN8MHowEQYJYIZI
AYb4QgEBBAQDAgEGMEcGA1UdIARAMD4wPAYLYIZIAYb4RQEHAQEwLTArBggrBgEFBQcCARYf
d3d3LnZlcmlzaWduLmNvbS9yZXBvc2l0b3J5L1JQQTAPBgNVHRMECDAGAQH/AgEAMAsGA1Ud
DwQEAwIBBjANBgkqhkiG9w0BAQIFAAOBgQCIuDc73dqUNwCtqp/hgQFxHpJqbS/28Z3TymQ4
3BuYDAeGW4UVag+5SYWklfEXfWe0fy0s3ZpCnsM+tI6q5QsG3vJWKvozx74Z11NMw73I4xe1
pElCY+zCphcPXVgaSTyQXFWjZSAA/Rgg5V+CprGoksVYasGNAzzrw80FopCubjGCAjwwggI4
AgEBMIHhMIHMMRcwFQYDVQQKEw5WZXJpU2lnbiwgSW5jLjEfMB0GA1UECxMWVmVyaVNpZ24g
VHJ1c3QgTmV0d29yazFGMEQGA1UECxM9d3d3LnZlcmlzaWduLmNvbS9yZXBvc2l0b3J5L1JQ
QSBJbmNvcnAuIEJ5IFJlZi4sTElBQi5MVEQoYyk5ODFIMEYGA1UEAxM/VmVyaVNpZ24gQ2xh
c3MgMSBDQSBJbmRpdmlkdWFsIFN1YnNjcmliZXItUGVyc29uYSBOb3QgVmFsaWRhdGVkAhAx
JFj1NXt7O0a3laKzDxLgMAkGBSsOAwIaBQCggbEwGAYJKoZIhvcNAQkDMQsGCSqGSIb3DQEH
ATAcBgkqhkiG9w0BCQUxDxcNMDAwOTMwMTExOTExWjAjBgkqhkiG9w0BCQQxFgQUVumk6aKT
MHvFEv3emv8pVB0ethwwUgYJKoZIhvcNAQkPMUUwQzAKBggqhkiG9w0DBzAOBggqhkiG9w0D
AgICAIAwBwYFKw4DAgcwDQYIKoZIhvcNAwICAUAwDQYIKoZIhvcNAwICASgwDQYJKoZIhvcN
AQEBBQAEgYAM5/ECqN9v84XFKGSU8fJG/MRAsf4+7x9zH+Y627z1X8g6jwWd2rVS7miKb2Nk
0gHJ7txxcGLV5lDSgLHva9TNO6Gc0HDKmIxsVJ3eSMzIWH3u2KA7kN2w1n/KEslZblxac+xb
cvr13SlOweBZiaTDpWATI/tZyFALNP7Jadk/BQ==
--------------ms941D451F698E6E54F167359F--

Subject: RE: [Fwd: [weather] 1-Wire Wind Instrument]
From: William Beals <will@beals5.com>
Date: Sat, 30 Sep 2000 08:00:16 -0600
X-Message-Number: 2

All:

This is way cool! Maybe some of those rumors of new and compatible weather stations are finally going to come true!
I wish there were an email address or something so we could show him how to REALLY do it with ham radio.

will

Subject: RE: [Fwd: [weather] 1-Wire Wind Instrument]
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sat, 30 Sep 2000 10:23:08 -0500
X-Message-Number: 3

William Beals wrote:
 >
 > All:
 >
 > This is way cool! Maybe some of those rumors of new and compatible weather stations are finally going to come true!
 > I wish there were an email address or something so we could show him how to REALLY do it with ham radio.

How about this...
http://www.ibutton.com/connections/catalogs/aag.html
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control

Texas A&M University 979.458.4020 (Phone) -- 979.847.8578 (Fax)

END OF DIGEST

You are currently subscribed to wxsig as: rpd@gci.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Re: APRSWXNET info

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 4 Oct 2000 21:43:39 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-112911-2000.10.04-21.50.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hate to be a pest Russ, still showing up in NW Missouri. Looks like I'm in
the red now, I guess because my readings are substantially different than
others in the area? Still doesn't show up in upper case so maybe the
changes have not taken effect yet?

>I made some changes, corrected some errors, and added two new stations to
>APRSWXNET, which now has 8 stations.....

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] Re: APRSWXNET info

From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 4 Oct 2000 21:15:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-112914-2000.10.04-22.26.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
Subject: [wxsig] Re: APRSWXNET info

> Hate to be a pest Russ, still showing up in NW Missouri. Looks like I'm
in
> the red now, I guess because my readings are substantially different than
> others in the area? Still doesn't show up in upper case so maybe the
> changes have not taken effect yet?
>
Hi Rich,

The Quality Checking and Monitoring System (QCMS) that does the quality
checking for APRSWXNET has been down most of today. The changes I
requested last week to correct some positions and elevations and to add two
new stations had not been made yet this morning when things went down.
You're correct that if the position is wrong, it's a good bet that the
readings won't agree very well.

The change requests are made to a big computer facility that is always busy,
and since we are non-paying customers, we are low priority :(Hopefully, by
the end of the week. You'll be able to tell by the change from "ap001" to
"AP001".

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

5. [wxsig] Fw: Anemometer conversion constant

From: "Russ Chadwick" <crb5@uswest.net>
Date: Fri, 6 Oct 2000 17:07:58 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113422-2000.10.06-18.17.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a message that I sent to the Dallas Semiconductor weather e-mail reflector. This is about determining the conversion constant for wind speed with the 1-Wire anemometer. There may also be some interest on [WXSIG] also.

Russ
kb0tvj

----- Original Message -----
To: <weather@dalsemi.com>
Subject: Anemometer conversion constant

> Recently, there has been some discussion here about the conversion from
> cup anemometer rotation to wind speed. Here is a brief description of
> how we determined that value for the T-238 1-Wire Weather Station
> interface board. This description is streamlined as, in reality, we had
> much more trial and error. Lots of both :-)
>
> Given: the anemometer cups move at about 86% of the straight line wind
> speed. This came from a meteorologist I know, who remembered it from a
> college class long ago.
>
> Given: the anemometer radius (to the center of the cup) is about 2.5" as
> measured.
>
> Given: a wind speed of V ft/sec and a sampling time of T sec.
>
> Then in a time T sec, V*T feet of air go past the anemometer and the cup
> moves 0.86*V*T in this time. The cup motion is in a circle of
> circumference 2*pi*2.5/12 feet, so the number of rotations, N, in this
> time is the distance moved divided by the circumference,
>
> N = 0.86*V*T/(2*pi*2.5/12) = 0.657*V*T where V is in ft/sec and T is in
> sec.
>
> Now, change to V in miles per hour by multiplying the right side by
> 3600/5280 to get,
>
> N = 0.448*V*T where N is the number of rotations in T sec and V is in
> mph.
>
> Now, solve for V to get
>
> V = 2.23*N/T
>
> If T=1 then N is the number of revolutions per second so the conversion
> constant from rev/sec to wind speed in mph is 2.23.
>
> Let C be the number of counts in time T, and note that N = C/2, since
> the 1-Wire weather station gives 2 counts per rotation due to the fact
> that there are two magnets and one reed switch.
>
> Then substituting for N and letting T=5 sec (as in the T-238), we get
>
> V = 0.223*(C per 5 sec)
>
> So, the conversion constant is 0.223 and after our calibrated wind
> tunnel tests on four 1-Wire weather stations, we selected the value of
> 0.228 to multiply times the number of counts in 5 seconds to get the
> wind speed in miles per hour.
>
> Our wind tunnel tests showed a consistent non-linear response below
> about 8 - 10 mph. So, any visual counting of rotations during wind
> speeds below 10 mph to check the conversion constant will give erronous
> results. At speeds faster than this, it is hard to accurately count the
> rotations. That's why we used the University of Colorado wind tunnel
> which is capable of well calibrated wind speeds up to 32 mph. These
> results are available in a Excel spreadsheet which I've sent to a number
> of people and will be happy to send to anyone else who requests it. If
> you've gotten a copy of it in the past year, it hasn't changed.

>
> Information on the T-238 is at http://www.beals5.com/wx
>
> Russ
>
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] T238 JR

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Fri, 6 Oct 2000 20:47:02 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113439-2000.10.06-20.52.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am ready to begin construction of my second T238. There was talk of a
smaller form factor board from some of the sig members. Is someone still
working on this?

Also, has anyone done current measurements on the T238? Aside from removing
the display, are there additional things I can do to reduce current
consumption. I am planning a remote monitoring project and want to reduce
current comsumption as much as possible.

Tnx,

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] Falling out of Convers mode

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Fri, 6 Oct 2000 21:18:36 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113447-2000.10.06-21.26.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

Looks like my TNC is falling out of convers mode and that's causing my
station to go off air.

I removed the TNC and plugged the T238 into my PC from the T238's TNC port
just to make sure. I saw data every 60 counts so I am guessing my TNC is
falling out of convers mode just as yours was. When I logged into the TNC,
hitting the enter key brought up "cmd:" so that pretty well confirms it. I
do not have a high RF environment so am not sure where to start for trouble
shooting. My antenna is about 200' from the TNC/Radio and is well grounded.

I had the same problem with a completely different TNC and radio so I don't
think the problem is specific to particular equipment.

Does anyone have suggestions for TNC parameters that will keep the darn
thing in convers mode?

Will, is there some way to force a ^c and issue the commands to reinitialize
the TNC every 24 hours or by some user defined interval?

Regards,

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] RE: T238 JR

From: William Beals <will@beals5.com>
Date: Fri, 6 Oct 2000 20:34:09 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113448-2000.10.06-21.40.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

A smaller version of the T238 has been discussed. At this point we are waiting for someone to have a practical alternative to the discontinued Dallas sensor unit to justify the project. Lots of noise has been made and I hope it is only a matter of time before this happens. No schedule yet though.

To reduce power I can suggest the following:
1) Remove display (huge savings)
2) Remove 9.xxxMHz crystal oscillator.
3) Remove LED

That is about all that I can see is removable. There probably is stuff I can do with the T238 firmware to reduce power, but no effort has been made in that area.

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Friday, October 06, 2000 7:47 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] T238 JR

I am ready to begin construction of my second T238. There was talk of a smaller form factor board from some of the sig members. Is someone still working on this?

Also, has anyone done current measurements on the T238? Aside from removing
the display, are there additional things I can do to reduce current consumption. I am planning a remote monitoring project and want to reduce current comsumption as much as possible.

Tnx,

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(A8"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`4````4D4Z(%MW>'-I
M9UT@5#(S."!*4@"H!0$%@ ,`#@```- '"@`&`!0`(@`)``4`*P$!(( #``X`
M``#0!PH`!@`4`!T`,P`%`% !`0F `0`A````,31%1CA&-D%#-#E"1#0Q,4$X
M-38P,# P13@Y0C-#,#D`+ <!`Y &`!0(```A````"P`"``$````+`",`````
M``,`)@``````"P`I```````#"`X```````,`-@``````0 `Y`."^#Q(',, !
M'@!P``$````4````4D4Z(%MW>'-I9UT@5#(S."!*4@`"`7$``0```!8````!
MP# '$@]JC^\5F\01U*A6``#HFSP)```>`!X,`0````4```!33510`````!X`
M'PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80;W2:20,`!Q!8! ``'@`(
M$ $```!E````4DE#2#I!4TU!3$Q%4E9%4E-)3TY/1E1(150R,SA(05-"145.
M1$E30U534T5$05142$E34$])3E1714%215=!251)3D=&3U)33TU%3TY%5$](
M059%05!204-424-!3$%,5$523@`````"`0D0`0````,%``#_! ``80<``$Q:
M1G5?H\,I/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]
M$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@P&YG,3 S
M,PNF!_ Z:0]@.@JB"H0*@$$@DG,`P&QL!) @=@20`P"0`B @;V8@=&B 92!4
M,C,X( ]P)00@8@GA(&0$`&-U\P00"8 N( _@!4 94 0`V"!P;PN !4!W&7 *
MP)49<'<+<'0+@&<@`A U!<!S`W!E`B 9<'1O;QG1&* <,!N@<@#0'+!CTP=
```

```
M'#!L= 2181RP'A$_'<$94AIR`B$+@ I09""^1!A!&?$/H " !;%U`P";&T$=
MT&H:L!RP9GD90RD1,&]J!9!T&P%,;_9T!" 9(6X;P ^@&=@`P"<!`!PP%- @
M21G0;W#O&7 B`1N!`B!L(L >0 # _P) &'$9(@=Q&A$=`1VA&W+=#W!P)@``
M@!L!3AW0!/#)&6!D=1A@('D/L!E!T0A@9V@N%TI4'= )<?L5$",!;QP0!< E
MP![ `Z#Z<RJ 9P>0&T(9< (0&%"G+# <P1<U,2D'\&4$8,\>$1IQ"U$BP"AH
M*H 9<*9S'@`<P7,I%T0R+K>(.2YX,<!-2'HLD.QR>2* 'M%O!/ #$ M@%1W
M<BJU,RZW3$5$_RK+#W F0P&@"& %0!A!&4'_-7$LA0G@)E()<"[Q`: 88.\;
M`350!) C`V(WX2+ &X'M(H!U`2 L=60=T /P&5#A&4AF:7)M'( H,BN<[BP:
M$#8!)$ @`1$)$22=]PN -F0<06$JNP/P&% 72N$*]&QI,S8!0!6@`4 /(R$?
M(!Z0$'0Q-B MM4,R3P409PN 'M%-!Y#_," M$$,S%T9"1$(1"Q-"1F!I+3$T
M- % 09 Q'#@P`4 ,T$;38B!&EP-A%S `DF(6U"!"!9 ":SIC6U--5% ZLG<*
M`'A /T `(&A!D,AN:RX=D'1=%T5(`,\&8 (P2&=((&ED+Y \P,Y/'I XT!AQ
M,#8\P '0`4=@(#<Z-#<@4 Y-2V<K@$AG5$%04G@@5U@&`"8`,M >T4F7`C X
M<2TQ1P-@=7!+:(QU8B-22&=;=W@`D.1G71F$2E)$WT7J092?"[874PKC"H E
MP&%M*Z'_)4 BP1W0&B!#L2R0`B B@.YR%1 <L!CT;2+ #Z @8;\@X!F2."<<
M@ 0@,G%K&1+>81=$&"8=`5@`9AZ!!;'_!N +$1SP`V$=,QD64Z$E(/<NX$V!
M*1))(5$=52*!0%:^=P6P%+$<X!CQ&V(_%TO>;!U /, 9X@!P>1V".C#['9$:
MH'()<!OA!X 9\ AP[R[@3 $F<AE'/QL1`) E4?]>4S>3',$71!_U+W(\P#N3
M_SAC)4 :<%F2'M$;83!A.<C/.]ADQ1=$61)U;04P&.'W8!)7X@M1;@,``'-$>
M0#>2_Q\@)2 "(!R@!; <PB,E)7._'( ;X3O7;+5DU06@;6U&^QPP!"!M%1 Z
MD!GQ&[ $$,9I-_(JRVYX+!=*2/R^+5! 2D% ?@J 1*=9"&#O'#-DQ2:Q+.!B
M!/(:("#@=QW!4X-S03H<`%_!!T!SND!RD7 :L 20&* N<I'_*R<AX'IG(6(@
MX!Y `F `<'];\"[@"W V41W0&& >`2T#4X-&P#4W,#=-0-]!D"* *1 !D!$P
M+@6P:!4+%T01\0"#```#`! 0``````,`$1 ``````P" $/____] ``<P@"XQ
M> 8PP % ``@P@"XQ> 8PP $+``" "" &``````# ````````1@`````#A0``
M``````,``H (( 8``````, ````````!&`````!"%`````````P`%@ @@!@``
M````P ````````$8`````4H4``+<-```#``F "" &``````# ````````1@``
M```!A0````````!X`(H (( 8``````, ````````!&`````%2%```!`````! ``
M`#@N, `+`": "" &``````# ````````1@``````.A0````````,`)X (( 8`
M`````, ````````!&`````!&%`````````P`I@ @@!@``````P ````````$8`
M````&(4`````````>`#B "" &``````# ````````1@`````VA0```0````$`
M`````````'@`Y@ @@!@``````P ````````$8`````-X4```$````!````````
M`!X`.H (( 8``````, ````````!&`````#B%```!`````0`````````>`#T`
:`0````4```!213H@``````,`#33]-P``8@*%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

9. [wxsig] RE: Falling out of Convers mode

From: William Beals <will@beals5.com>
Date: Fri, 6 Oct 2000 20:38:18 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113449-2000.10.06-21.42.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Detecting loss of conversation mode is on my to-do list. I don't have a task for even looking at return data so this is not something trivial but I agree should be done. In my case the problem went from happening about every week or so to never at all when I went from a wire-wrapped board to the PC board. I also changed power supplied when I changed boards too, so I never isolated the problem. I suspect it was either RF getting into the TNC from my totally unshielded wire-wrapped board or dirty power (also through RF) messing up the TNC.

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Friday, October 06, 2000 8:19 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Falling out of Convers mode

Will,

Looks like my TNC is falling out of convers mode and that's causing my station to go off air.

I removed the TNC and plugged the T238 into my PC from the T238's TNC port just to make sure. I saw data every 60 counts so I am guessing my TNC is falling out of convers mode just as yours was. When I logged into the TNC, hitting the enter key brought up "cmd:" so that pretty well confirms it. I do not have a high RF environment so am not sure where to start for trouble

shooting. My antenna is about 200' from the TNC/Radio and is well
grounded.

I had the same problem with a completely different TNC and radio so I don't
think the problem is specific to particular equipment.

Does anyone have suggestions for TNC parameters that will keep the darn
thing in convers mode?

Will, is there some way to force a ^c and issue the commands to
reinitialize
the TNC every 24 hours or by some user defined interval?

Regards,

Rich Beckwith - Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(AL"`0:0" `$`````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$`````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`H````4D4Z(%MW>'-I
M9UT@1F%L;&EN9R!O=70@;V8@0V]N=F5R<R!M;V1E`.H-`06 `P`.````T <*
M``8`% `F`!(`!0`X`0$@@ ,`#@```- '"@`&`!0`(P`)``4`+ $!"8 !`"$`
M```Q.$5&.$8V04,T.4)$-#$Q03@U-C P,#!%.#E",T,P.0`P!P$#D 8`, D`
M`"$````+``(``0````L`(P```````P`F```````+`"D```````,`+@``````
M`P`V``````! `#D`X ^QI@<PP $>`' ``0```"@```!213H@6W=X<VEG72!&
M86QL:6YG(&]U="!O9B!#;VYV97)S(&UO9&4``@%Q``$````6`````< P!Z:Q
M:H_O&9O0$$=2H5@``Z)L\"0```@`># $````%````4TU44 `````>`!\,`0``
M`! ```!W:6QL0&)E86QS-2YC;VT``P`&$&%7%X$#``<0P 4``!X`"! !````
M90```%))0T@Z1$5414-424Y'3$]34T]&0T].5D524T%424].34]$14E33TY-
M651/+41/3$E35$E$3TY42$%614%405-+1D]2159%3DQ/3TM)3D=!5%)%5%52
M3D1!5$%33U1(25-)4TX``````@$)$ $````+!@``!P8``%D)``!,6D9UA.*3
MCS\`"@$#`?<"I /C`@!C:,$*P'-E=# @!Q,"@T,`4 [F<')Q,@_F?1,*@ C(
M(#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@8P!0"P-C`$$+8,!N9S$P,S,+I@?P
MNFD/8#H*H@J$"H!$#[!E!9!T"X!G( D`!!%O)&8@!:!N=@20<V'K&% "(" $
M8B $`!C@&=& >2!T;RUD;QB0000`="X@22 ;`&Y.)P5 #W 94"!A&L!AV'-K
M( (0!<!E&5 #H%T)`&\4L1B &9 @"7!T6PAP`Z!D&9 <8',;$'3F:!I!&D%N
M;P5 'M '@#L?`1AQ= 40%' '0"!BMG4%0!N080G"'L!H"&#<;&0@T!H@&[%E
M&W ;@'T:@V,<D!H@'P`:(!$P;^$"8&5M('<)\ 5 `U+Y' %P< GP':,&X"#Q
M'1'V<AJP)"!E'+ %L1[2&Q#?(F 941W2!T #('<C< .@'QN0)"@<8 /P"7 M
M=W([)-(A\6\+$2;"(V)00W\IQ"*")X$>T0]A%@`IH7#V;R0@)H%U). ;,"FA
M)]7/*\8ITP0@&M!O+!["&Y#_)P0$``;P&9 IH2-I*R,LH-YS)/ 80!HP!4!W
M') =`,<QH"-P!<!21B L``) YQAB"X J-51.*K D<QJCMP&0)Z :L'4`@!\0
M92'@URT"*1\F8F0UP'0:L"Q$CB@K<Q\``V!U9V@R<7XI&> 'D "0&'$LL#-V
M+C\72@/P)Z 72@KT&S S-C\!0!6@`4 CH1@B$'0Q-M0@+3WB3P409PN (+'^
M33D!(4 I,#WB%T8\]#S!@PL3//9I+3$T- % <1LP,3@P`4 ,T$&#8EP@1@-A
M%S ,DF(6U" :0@60:P/P'P`@6U,@3510.G<*``A CF4*P!\`&S!N:RXB8/QT
M71=%0K &8 (P0Q="T.II'H!Y+L!/&$ CP"<Q'# V+L !T$(0(#@ZE#$Y*I!-
M1A=4;T,7@%1!4%(@5U@&`#\Q42"B(K 8( EP&U @1\4X47!&&'5B:A@Q0Q?(
M6W=X`)!G74+ )Y'_&&(E@ACQ"% 90QGC/X] FE\\1 NV%U,*XPJ 5SKQ+-T7
M2DP=<00@&S!K&B :H?LSPAI!9DZ\&249Y !P, +]&9 G!" C$#$P&&(:H!=$
M]QM0&90FT6<;$!CP&0`+</YR.AL;D EP!& 94# $,\(?5^(+4#AP+ (S@S(S
M./\S)!JA*J$D<UV66&$SPBQ NP`@%T1J,3 %0%Y"8551]RR@"7 PU&$'X!Z#
M)<0\<%L9$34`= 0@+N-A) !G_PI0.115AQ=$5B]7.6"S,>'>>0AA!" QT2*!
M5R?D"0#_74,S.E0%'Q RU"-B)#$G,3M54!JP8CA3!4 Y<2)C\&UD.B(>Q!WA
M$3 RP<\F`B>A&2%!4')M'S$;8?\;@!=$&P$?@AP5'Q X@VMA^Q1P`V!N!X D
M01[18_$?@_]AD2?"<J$FT5F1`" <PR!@?PA@(]%9-2&P'Y 882*!3?<:L !P
M&"!N/H :,B5D2+'&)U(),] O4F$W$''Q_U?Q&D%N(PG 8T$U<5KM#W!_, 09
M@ > (YA$0AQ@!:!M_PM0&!$TT3<0`2!+X21!7);_*6!X`B[C&[,71" "'+ C
M:G\:03%"!I 7`";""K$84&/C(= *P65Q=04@<9(Z&_Q$;P>1`'!GX")@' 0L
MH/]=01M0&;%6`06Q7],*P'L!WTO1+G%M<CKB:\%E.80>@.\$H'\(,Q)7"S\7
M2E/#&C*_,C(A@1_1,<$:LAS"8QQ"_EZ!('A$+* C1'PQ`X$N8\\>`0N ,: '
```

```
M,6EZ4$4SAKDEQ#(T' !G\P6Q8AJP?XMC,3 G,0$!"X!I5 20=N,'0(FK4F5G
M+D)4"T.LOBU*\$3Q.RZ6_#]760A@=QQ0<J&!P')],C31+*!BWP3R(A J$TXS
M9Z$Z)! &T+M%,"N 0'PRD;(94"Y\,?\71$H`-/*9]A[ "? A\!Q@_P)@`' <
ML"/P"W #(";1(^ /'"$I0$Y"07 U-S WO$U &S)H8 &0$3 N!; 69Q=*$?$`
MHH ``P`0$ `````#`!$0``````,`@!#_____0 `',$"\&C8',, !0 `(,$"\
M&C8',, !"P``@ @@!@``````P ```````$8``````X4````````#``* "" &
M``````# ````````1@`````0A0````````,`!8 (( 8``````, ```````!&
M`````%*%``"W#0```P`)@ @@!@``````P ```````$8``````84````````>
M`"* "" &``````# ````````1@````!4A0```0````0````X+C `"P`F@ @@
M!@``````P ```````$8`````#H4````````#`"> "" &``````# ````````
M1@`````1A0````````,`*8 (( 8``````, ```````!&`````!B%````````
M'@`X@ @@!@``````P ```````$8`````-H4```$````!`````````!X`.8 (
M( 8``````, ```````!&`````#>%```!`````0`````````>`#J "" &````
M``# ````````1@`````XA0```0````$`````````'@`]``$````%````4D4Z
/( `````#``TT_3<``*9E
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] Re: T238 JR

From: Doug <dbuhrman@radiks.net>
Date: Sat, 07 Oct 2000 08:40:31 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113505-2000.10.07-08.49.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich Beckwith wrote:

> I am ready to begin construction of my second T238. There was talk of a
> smaller form factor board from some of the sig members. Is someone still
> working on this?
>
> Also, has anyone done current measurements on the T238? Aside from removing
> the display, are there additional things I can do to reduce current
> consumption. I am planning a remote monitoring project and want to reduce
> current comsumption as much as possible.
>
> Tnx,
>
> Rich Beckwith - Wn0x
>
>

Rich:
Without a display my T238 draws 48mA. I put together a version of the T238 using surface mount and
got the size down to 2.4 x 2.9 inches.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Re: T238 JR

From: William Beals <will@beals5.com>
Date: Sat, 7 Oct 2000 07:55:21 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113506-2000.10.07-08.57.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

Did you do a layout or hand assembly? Sounds cool!

will

Rich:
Without a display my T238 draws 48mA. I put together a version of the T238 using surface mount and
got the size down to 2.4 x 2.9 inches.

```
begin 600 WINMAIL.DAT
M>)\^(AT-`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
```

```
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M````@2L?I+ZC$!F=;@#=`0]4`@`````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`8````4D4Z(%MW>'-I
M9UT@4F4Z(%0R,S@@2E(`N08!!8 #``X```#0!PH`!P``#<`%0`&`$$!`2"
M`P`.````T <*``<`!P`V`"8`!@!1`0$)@ $`(0```$0W1C(T.$1%,C8Y0T0T
M,3%!.#4V,# P,$4X.4(S0S Y`"$''0.0!@!L! ``(0````L``@`!````"P`C
M```````#`"8``````L`*0``````P`N``````#`#8``````$ `.0# <QX\
M9C# `1X`< `!````& ```%)%.B!;=WAS:6==(%)E.B!4,C,X($I2``(!<0`!
M````%@````' ,&8\#=Y(\MB<)A'4J%8``.B;/ D``!X`'@P!````!0```%--
M5% `````'@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A GGPA(`P`'
M$* ````>``@0`0```&4```!$3U5'.D1)1%E/541/04Q!64]55$]22$%.1$%3
M4T5-0DQ9/U-/54Y$4T-/3TQ724Q,4DE#2#I7251(3U54041)4U!,05E-650R
M,SA$4D%74S0X34%)4%545$]'151(15)!5D52``````(!"1 !````50$``%$!
M``"H`0``3%I&=73AZ+,_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H F?0J
M",@@.PEO,C66-0* "H%V")!W:PN M&0T#&!C`% +`V,`08$+8&YG,3 S,PNF
MY"!$"&!G.@JB"H0*@"!$:60@>0A@(&3P;R!A( M@%K$%0 6Q+P]P$T 7$ 00
M90;0;'G\/R &``A@$T $( 6@!O!V(16Z`_!L"5 5QPLP;+AI,S8!0!00`4!P
M`V#*= 60=!6T4FD/8!6EL%=I=&@7<A<@9 0`$0M1>2!M'H!4,C,B.!;@<F%W
M!" T.(AM02X8P$D@<!>!:'1O9P^P: 20%Q%V[P20`) "(!>@9B! (* >Q*9U
M`) 4<"!S"'!F`-"_(= $8!D`'>$30!6T9QP@VR&C`)!Z(= 6\'<#H"!00" R
M+C0@>"51.6X@"X /8 >0+A6Z$&$``2=P`````P`0$ `````#`!$0`0````,`
M@!#_____0 `',( G!B)F,, !0 `(,( G!B)F,, !"P``@ @@!@``````P ``
M`````$8``````X4````````#``* "" &``````# ````````1@`````0A0``
M``````,`!8 (( 8``````, ```````!&`````%*%``"W#0```P`)@ @@!@``
M````P ```````$8``````84````````>`"* "" &``````# ````````1@``
M``!4A0```0````0````X+C `"P`F@ @@!@``````P ```````$8`````#H4`
M```````#`"> "" &``````# ````````1@`````1A0````````,`*8 (( 8`
M`````, ```````!&`````!B%````````'@`X@ @@!@``````P ```````$8`
M````-H4```$````!`````````!X`.8 (( 8``````, ```````!&`````#>%
M```!`````0`````````>`#J "" &``````# ````````1@`````XA0```0``
G``$`````````'@`]``$````%````4D4Z( `````#``TT_3<``"C-
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

12. [wxsig] Re: T238 JR

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sat, 7 Oct 2000 10:24:41 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113527-2000.10.07-10.30.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Cool, that would be perfect, especially at only 48ma. I don't have a lot of
experience with SMT but would give it a try for such a small form factor.

Where did you get your PCB? Did you include the debugging circuitry and
extra oscilator?

Regards,

Rich - Wn0x

>Without a display my T238 draws 48mA. I put together a version of the T238
using surface mount and
>got the size down to 2.4 x 2.9 inches.
>
>
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Some thoughts

From: William Beals <will@beals5.com>
Date: Sat, 7 Oct 2000 21:24:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113614-2000.10.07-22.28.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Good news. There continues to be enough demand for the T238 that the TAPR folk will be building another batch. Also, as there continue to be hopeful signs for a follow-on sensor unit compatible with the Dallas unit, the son-of-T238 (a.k.a. T238 Jr, T239, T238-II, etc) project may also get TAPRs nod. (I used a lot of tentative statements there on purpose, but things are looking very good right now)

When the subject came up earlier on this reflector most of the interest seemed to center around a smaller more compact version of the current board that is much more weather-centric, not as much a general-purpose board. I would like to see if the consensus from the group is still the same. Hence here are some suggestions on what might change:

1) Remove Debug support (if you want to develop code get the regular T238) This would involve removing the 9.xxxMHz crystal, support jumpers, and debug DE9 connector. You will still be able to update code using the MON08 program, but not be able to use the monitor program to update the loader.

2) Remove Option header J6. Removing general purpose expansion possibilities

3) Go to surface-mount components to further reduce size--including micro. This really means that reprogramming the boot code will be difficult.

4) Make the board the same size as the LCD module if at all possible.

5) Assume switches and LED will be off-board, just provide headers for them to solder wires on to.

6) I'd like to consider a switching 5V regulator to cut down on heat but am afraid it will not be cheap. Would you be willing to pay an extra $5-$8 for this?

7) What about the seperate male and female connectors (PC and TNC). I did this because I hate adapters. If this causes space problems we may have to lose one--then which one?

8) What about two 1-wire RJ-11 headers if there is room?

After posting all the above, I am off on a one-week business trip this coming week and will be out of email contact for the entire week, so I won't be ignoring anyone, just off-line.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] Re: Some thoughts

From: John Koster <w9ddd@tapr.org>
Date: Sun, 8 Oct 2000 09:49:54 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113711-2000.10.08-09.59.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Sat, 7 Oct 2000, William Beals wrote:

> Folks:
>
> 1) Remove Debug support (if you want to develop code get the regular T238)
> This would involve removing the 9.xxxMHz crystal, support jumpers, and
> debug DE9 connector. You will still be able to update code using the MON08
> program, but not be able to use the monitor program to update the loader.
>
One might be able to retain the hooks for debug via some pads you solder
wires to? I always meant to ask. Is the 9 Mhz required to match some
hard coded divide by used for serial I/O in debug mode? Could be scale up
the debug baud rate, so that some multiple of the 9 MHz clock can be used
all the time? (probably screw up all the other scale factors used for
timing in the regular code)

>
> 3) Go to surface-mount components to further reduce size--including micro.
> This really means that reprogramming the boot code will be difficult.
>

May not be require to get it down to LCD module form factor, however TAPR
is slowly headed down that path. A soon to be announced kit will be a mix
with the SMT already done.

> 4) Make the board the same size as the LCD module if at all possible.

We could then do as one of the HAMHUD PCB versions does, stack and plug
directly together - eliminates that nasty cable problem we had with the
original T238.

>
> 5) Assume switches and LED will be off-board, just provide headers for them
> to solder wires on to.
>

I think we need to do this also with the next batch of T238 kits - the
header is there. Just simply state the 4 of the 5 switches are no longer
included due to limited stock.

> 6) I'd like to consider a switching 5V regulator to cut down on heat but am
> afraid it will not be cheap. Would you be willing to pay an extra $5-$8
> for this?
>
We alread have a proven design from another kit, but it does take more
parts and more costly IC.

> 7) What about the seperate male and female connectors (PC and TNC). I did
> this because I hate adapters. If this causes space problems we may have to
> lose one--then which one?

I hate to suggest this considering the 1-wire already usese RJ-11s, but
there is a pseudo standard pin out for using an RJ-11 for RS232. these
would take less space. On the other hand if we leave the most used
connector - TNC, isn't a connection to the PC just a null modem cable
which used to be relatively common.

>
> 8) What about two 1-wire RJ-11 headers if there is room?
>

Depends on what we do with the other connectors. If nothing else, we can
check for clearance for an external "T".

I don't want to make any rash promises, but I might be able to do some
'what if' work on a layout over the next week. It would tie in with some
work I should be doing for the HAMHUD as well.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==========
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] Re: T238 JR

From: Doug <dbuhrman@radiks.net>
Date: Sun, 08 Oct 2000 20:11:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113823-2000.10.08-20.20.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich Beckwith wrote:

> Cool, that would be perfect, especially at only 48ma. I don't have a lot of
> experience with SMT but would give it a try for such a small form factor.
>
> Where did you get your PCB? Did you include the debugging circuitry and
> extra oscilator?
>
> Regards,
>
> Rich - Wn0x
>
> >Without a display my T238 draws 48mA. I put together a version of the T238 using surface mount
> and
> >got the size down to 2.4 x 2.9 inches.
> >

Rich & Will:
Yes I included the 9.8MHz oscillator. I used 10-pin headers for the serial ports. The SMT T238 board is electrically the same as the one you developed and put out through TAPR. Sorry for the lack of originality, but it gave me a chance to try the ExpressPCB software without worrying about if the circuit would work. Also I don't have any experience using Motorola processors. I did add a few easy things. Next to the RJ-11 is a 2-pin compression connector to quickly add another 1-wire bus without having to use a connector. I did this to play with some 1-wire stuff on proto-board. On the bottom of the board I added some pads to solder two i-Button can holders or 1 holder, a 2438 chip and the Motorola pressure chip. I had 10 boards etched and have built up 4 so far. I have enough parts to build-up all 10 boards except for the SMT MAX232 chip. They've been on backorder from Digi-Key. I could send some pictures if you like.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

16. [wxsig] Re: Some thoughts

From: David Fullmer <fullmer@cray.com>
Date: Mon, 09 Oct 2000 07:47:14 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113925-2000.10.09-09.59.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The list of features sounds great so far (and yes, I think the extra
$5-8 would be worth it for a switching power supply. It should even
reduce power consumption further if done right). One additional item
that would be cheap and handy is to put the micro in a socket. That way
it can be much more easily (re)programed if needed by folks that have
access to programming equipment.

Dave Fullmer

William Beals wrote:
>
> Folks:
>
> Good news. There continues to be enough demand for the T238 that the TAPR
> folk will be building another batch. Also, as there continue to be hopeful
>.....

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

17. [wxsig] Re: T238 JR

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 9 Oct 2000 12:59:07 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113964-2000.10.09-13.04.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'd like to see the pictures Doug.

>Rich & Will:
>Yes I included the 9.8MHz oscillator. I used 10-pin headers for the serial
ports. The SMT T238
>board is electrically the same as the one you developed and put out through
TAPR. Sorry for the
>lack of originality, but it gave me a chance to try the ExpressPCB software
without worrying about
>if the circuit would work. Also I don't have any experience using Motorola
processors. I did add a
>few easy things. Next to the RJ-11 is a 2-pin compression connector to
quickly add another 1-wire
>bus without having to use a connector. I did this to play with some 1-wire
stuff on proto-board.
>On the bottom of the board I added some pads to solder two i-Button can
holders or 1 holder, a 2438
>chip and the Motorola pressure chip. I had 10 boards etched and have built
up 4 so far. I have
>enough parts to build-up all 10 boards except for the SMT MAX232 chip.
They've been on backorder
>from Digi-Key. I could send some pictures if you like.
>
>Doug K0DSP
>
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] Re: T238 JR

From: "Russ Chadwick" <crb5@uswest.net>
Date: Mon, 9 Oct 2000 13:06:52 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-113972-2000.10.09-14.25.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Doug <dbuhrman@radiks.net>
Subject: [wxsig] Re: T238 JR

> Yes I included the 9.8MHz oscillator. I used 10-pin headers for the
serial ports. The SMT T238
> board is electrically the same as the one you developed and put out
through TAPR. Sorry for the
> lack of originality, but it gave me a chance to try the ExpressPCB
software without worrying about
> if the circuit would work. Also I don't have any experience using
Motorola processors. I did add a
> few easy things. Next to the RJ-11 is a 2-pin compression connector to
quickly add another 1-wire
> bus without having to use a connector. I did this to play with some
1-wire stuff on proto-board.
> On the bottom of the board I added some pads to solder two i-Button can
holders or 1 holder, a 2438
> chip and the Motorola pressure chip. I had 10 boards etched and have
built up 4 so far. I have
> enough parts to build-up all 10 boards except for the SMT MAX232 chip.
They've been on backorder
> from Digi-Key. I could send some pictures if you like.
>
> Doug K0DSP

Doug,

I would like to see the pictures.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

19. [wxsig] Re: T238 JR

From: John Koster <w9ddd@tapr.org>
Date: Mon, 9 Oct 2000 18:18:54 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114003-2000.10.09-18.27.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is there a need to make it smaller than the LCD module? I've done a
little quickie layout, and I think it could be made 2.6x3.9" and still
keep the 40DIP processor so it can socketed. The MAX232 or may not have
to be SMT. Also if the design uses only one clock freq does the processor
support using an xtal instead of oscillator module? That would save space
also.

John Koster, W9DDD
<w9ddd@tapr.org>

==========
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

20. [wxsig] Re: T238 Jr. Wish List II

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 10 Oct 2000 08:40:50 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114110-2000.10.10-08.47.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

- Smaller form factor and reduced component count, but it doesn't need to be as small as the display.

- How about designing around a readily available case?

- Would prefer a socketed CPU to make upgrading easier. (Same CPU as T238Sr.)

- Keep the 1-Wire RJ-11 jacks on the board if possible (2 would be nice). Please give me an easy to
access header or test point for other 1-Wire devices.

- Two 1-Wire button holders (1 for the DS1994 Clock)

- Space for Motorola MPX4115A BP sensor and DS2438 Temperature - A/D device.

- The extra $$ for a regulated PS might be made up for by removing 9.00 MHz oscilator.

- Please leave the DB-9 connectors. I hate adapters too. With a properly designed board layout,
(depends on case) you can cut a nice neat rectangular hole for the DB9's instead of individual holes
which is a pain.

Will,

I don't necessarly see the changes as Weather oriented. I can think of many 1-wire telemetry projects
where I would want reduced size, current drain etc..

Thanks,

Rich - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] RE: DS 1994 clock chip

From: "Bill Hosking" <billh@inficad.com>
Date: Tue, 10 Oct 2000 13:42:20
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114168-2000.10.10-13.51.08--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Rich - two quick questions...
1)How did you connect your computer to the 1994 to program it??
2)The only SW I found on Dallas site for the 1994 was a visual basic
program, is that the right one. If not, what is the name?
Thanks
Bill W7JSW
billh@inficad.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

22. [wxsig] Processor chips

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Tue, 10 Oct 2000 14:49:02 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114169-2000.10.10-13.59.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What's a good source for the processor chip used in the wx station?
--
Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] RE: DS 1994 clock chip

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 10 Oct 2000 14:10:32 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114173-2000.10.10-14.18.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Use the I-Button viewer program. If you have the DS1994 correctly connected to the bus, then it will see the DS1994 (along with some other stuff) and you can program it then. Check out http://www.ibutton.com/software/tmex/index.html and download i-Button TMEX to get the viewer. DO NOT select Write Protect unless you want to permanently save your settings.

With your T238 disconnected and powered off you can use your 1-Wire serial adapter and connect directly to the T238 (assumes you have the DS1994 onboard) to program it.

>>> billh@inficad.com 10/10/00 01:42PM >>>
Rich - two quick questions...
1)How did you connect your computer to the 1994 to program it??
2)The only SW I found on Dallas site for the 1994 was a visual basic
program, is that the right one. If not, what is the name?
Thanks
Bill W7JSW
billh@inficad.com

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] RE: DS 1994 clock chip

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 10 Oct 2000 14:29:27 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114177-2000.10.10-14.35.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

P.S.

I installed an i-Button holder in the T-238 proto area and used J6 pin 14 for access to the 1-Wire bus.
  There is a handy spot for ground near the proto area which you can use as well. If you use the

i-Button holder keep in mind that the "+" is connected to the i-Button can and should go to ground.

Rich - Wn0x

>>> billh@inficad.com 10/10/00 01:42PM >>>
Rich - two quick questions...
1)How did you connect your computer to the 1994 to program it??
2)The only SW I found on Dallas site for the 1994 was a visual basic
program, is that the right one. If not, what is the name?
Thanks
Bill W7JSW
billh@inficad.com

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] Re: T238 JR

From: David Fullmer <fullmer@cray.com>
Date: Tue, 10 Oct 2000 14:05:58 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114191-2000.10.10-16.15.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just a quick thought - if the oscillator was socketed as well, then
switching it to a second frequency would be quite easy (if it's not a
SMD osc).

John Koster wrote:
>
> Is there a need to make it smaller than the LCD module? I've done a
> little quickie layout, and I think it could be made 2.6x3.9" and still
> keep the 40DIP processor so it can socketed. The MAX232 or may not have
> to be SMT. Also if the design uses only one clock freq does the processor
> support using an xtal instead of oscillator module? That would save space
> also.
>
> John Koster, W9DDD
> <w9ddd@tapr.org>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

26. [wxsig] Re: T238 JR

From: John Koster <w9ddd@tapr.org>
Date: Tue, 10 Oct 2000 18:34:04 -0500 (CDT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114209-2000.10.10-18.43.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As a rule oscillator modules are not socketed because they are heavy and
tend to walk out of the socket from vibration etc. However, an individual
is welcome to do whatever they wish. A crystal could be socketed as well
I guess.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Tue, 10 Oct 2000, David Fullmer wrote:

> Just a quick thought - if the oscillator was socketed as well, then
> switching it to a second frequency would be quite easy (if it's not a
> SMD osc).
>
> John Koster wrote:
> >

> > Is there a need to make it smaller than the LCD module? I've done a
> > little quickie layout, and I think it could be made 2.6x3.9" and still
> > keep the 40DIP processor so it can socketed. The MAX232 or may not have
> > to be SMT. Also if the design uses only one clock freq does the processor
> > support using an xtal instead of oscillator module? That would save space
> > also.
> >
> > John Koster, W9DDD
> > <w9ddd@tapr.org>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

27. [wxsig] Path to I-Gate

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 11 Oct 2000 08:44:56 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114375-2000.10.11-08.53.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I noticed my station wasn't showing up on findu, but local APRS stations were receiving fine. We had changed my Unproto from "relay,wide,wide" to "wide4-4" as an experiment. Although the local digi's support un-conventional paths, something between me and the next i-gate did not. Changed it back to "relay,wide,wide" and findu is happy again. I am still not sure who my nearest I-gate is, but it must be withing 3 hops. Similar experiences anyone?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

28. [wxsig] Re: Path to I-Gate

From: Steve Dimse <k4hg@tapr.org>
Date: Wed, 11 Oct 2000 10:58:08 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114381-2000.10.11-10.06.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 10/11/00 9:44 AM Rich Beckwith (Rich@dps.state.mo.us) wrote:

>I noticed my station wasn't showing up on findu, but local APRS stations
>were receiving fine. We had changed my Unproto from "relay,wide,wide" to
>"wide4-4" as an experiment. Although the local digi's support
>un-conventional paths, something between me and the next i-gate did not.
>Changed it back to "relay,wide,wide" and findu is happy again. I am still
>not sure who my nearest I-gate is, but it must be withing 3 hops. Similar
>experiences anyone?
>
There are a couple possible reasons. First, you can't hit the nearest
WIDE, therefore you need to go through a RELAY first. The other is the
WIDEs in your area do not support the WIDEn-n protocol, more than a few
do not.

In genera,l the best policy for users that do not understand fully how
the digipeat network works (and most of the time I think that is
everyone!) is to see what paths are working for people near you and
follow their example.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] Re: T238 JR

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 12 Oct 2000 09:10:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114584-2000.10.12-09.19.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John Koster wrote:
>
> As a rule oscillator modules are not socketed because they are heavy and
> tend to walk out of the socket from vibration etc. However, an individual
> is welcome to do whatever they wish. A crystal could be socketed as well
> I guess.

There are a number of applications where crystals are socketed. I've
also seen socketed oscillatorsin several. Most, however, had a
restraining strap, wire-tie or such...

gerry
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] APRSWXNET information

From: "Russ Chadwick" <crb5@uswest.net>
Date: Thu, 12 Oct 2000 22:00:50 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114670-2000.10.12-23.09.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Right now, 10 weather stations are included in the data file that goes from
findu.com to the Quality Checking and Monitoring System (QCMS) input here in
Boulder every 15 minutes. However, only six of these stations are entered
in QCMS and so the other 4 are rejected. I submitted the updated meta-file
about 2 weeks ago to the QCMS person who sends it to the computer people.
Unfortunately, my QCMS contact has had a death in his family, and that has
resulted in some delays.

Presently, AP001 and AP003 have small elevation errors and that affects
potential temperature which is one of the five parameters checked and so
there have been some potential temperature labeled as questionable.
Hopefully, more accurate elevations for these two stations will help that.
AP004 has a large position error due to my fumble finger typing and so that
quality checking is invalid until the position is corrected. AP006 may have
a bad position, as I put in the correct numbers but left a space between the
minus sign and the longitude number. All of these will be fixed when the
new station.txt file is submitted, checked out and input to the operational
QCMS program. It will also increase the number of stations to ten. As soon
as I find out that the change has been made, I'll post it here.

I've been asked if I could prepare a information write-up on APRSWXNET and
I'll commit to do that in the next few weeks. Some information about QCMS
is contained on this web page:

http://www-sdd.fsl.noaa.gov/MSAS/qcms.html

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

31. [wxsig] DS1994 Help

From: "Bill Hosking" <billh@inficad.com>
Date: Fri, 13 Oct 2000 13:56:24
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-114814-2000.10.13-14.05.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a puzzlement here, or I'm just missing a step...
I just installed a 1994 RTC in my T238 (Thanks to Rich's help/advice)

With the T238 off and RJ connector connected to my laptop, the TMEX program
immediately detected the ibutton and allowe me to set it. By the way, I
used the 'non-inverted' rj11 phone cord.

I loaded version 10 into T238 and turned it on with wx sensors plugged back

on. I expected it to automatically find/recognize the RTC - it didn't.

Rest of version 10 plays just fine.

Do I have to direct the T238 to find the 1994 like I did with the rest of
the sensors??

thanks
Bill W7JSW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] Re: DS1994 Help

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 17 Oct 2000 08:34:01 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115419-2000.10.17-08.40.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Are you absolutely sure you have version 10?

>>> billh@inficad.com 10/13/00 01:56PM >>>
I have a puzzlement here, or I'm just missing a step...
I just installed a 1994 RTC in my T238 (Thanks to Rich's help/advice)

With the T238 off and RJ connector connected to my laptop, the TMEX program
immediately detected the ibutton and allowe me to set it. By the way, I
used the 'non-inverted' rj11 phone cord.

I loaded version 10 into T238 and turned it on with wx sensors plugged back
on. I expected it to automatically find/recognize the RTC - it didn't.

Rest of version 10 plays just fine.

Do I have to direct the T238 to find the 1994 like I did with the rest of
the sensors??

thanks
Bill W7JSW

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

33. [wxsig] Re: DS1994 Help

From: "Bill Hosking" <billh@inficad.com>
Date: Tue, 17 Oct 2000 8:39:57
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115422-2000.10.17-08.50.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ya, sure you betcha! The version comes up on the 'display current values'
menu just like it's supposed to.
Bill

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

34. [wxsig] RE: Processor chips

From: William Beals <will@beals5.com>
Date: Tue, 17 Oct 2000 20:24:23 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115503-2000.10.17-21.48.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sam:

I got my chips from Arrow Electronics. http://www.arrow.com They are set
up to take credit card orders. They have a bit of steep shipping/handling

charge to discourage really small orders, bu are otherwise not too bad.

will

-----Original Message-----
From: Sam Smith [SMTP:sam.smith@ece.gatech.edu]
Sent: Tuesday, October 10, 2000 12:49 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Processor chips

What's a good source for the processor chip used in the wx station?
--
Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

```
begin 600 WINMAIL.DAT
M>)\^(A@"`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`<````4D4Z(%MW>'-I
M9UT@4')O8V5S<V]R(&-H:7!S`/()`06 `P`.````T <*`!$`% `8`!<``@`W
M`0$@@ ,`#@```- '"@`1`!0`%@`9``(`-P$!"8 !`"$`````U03(P-3A%.35#
M031$-#$Q03@U-C P,#!%.#E",T,P.0`%!P$#D 8`= 8``"$````+``(``0``
M``L`(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`
M(.PPAZHXP $>`' ``0```!P```!213H@6W=X<VEG72!0<F]C97-S;W(@8VAI
M<',``@%Q``$````6`````< XJH<GZ5@@6Z1<$=2H5@``Z)L\"0```@`># $`
M```%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&
M$)LKNFP#``<0=@(``!X`"! !````90```%-!33I)1T]435E#2$E04T923TU!
M4E)/5T5,14-44D].24-32%144#HO+U=75T%24D]70T]-5$A%64%215-%5%50
M5$]404M%0U)%1$E40T%21$]21$524U1(15E(059%04))5$\``````@$)$ $`
M``!:`P``5@,``+4$``!,6D9U*VI):C\`"@$#`?<"I /C`@!C:,$*P'-E=# @
M!Q,"@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@
M8P!0"P-C`$$+8,!N9S$P,S,+I@8!'&TZ"J(*A J 22!GXF\%0&UY( ]@!2 $
M($\#4@_A`V 'X$5L!9!T`P-@`P!C<RX@(&A!`D!P.B\O=QK@+AL*P!E1+@6@
M&1 @5&@F91A@"L!E( ^A('60<"!T;QS 86L<0*L%``F :05 8PL1( 6P+P2!
M&C(;TP]P=AQ 82#28AV1;V8<4'0)X!RPRG,8D7 +@&<O#W 4T.YL(($8<0K
M9QQ '-$=@+L$\ AA82&1"7 '0&P88*YS`, BT!X%+!]0=1P3VQ@@&^!R`_$<
M0&X8(1S0X1S@8F%D+A<Z`_ BT.<7.@KT(0`S-@% %: !0 \1,!@@&;$0=#$V
M("WU*8)/!1!G"X '0 70!Y#^<R)A*8,7-BB4*&$+$RB68&DM,30T`4 A`#$<
M.# !0 S0+2-B($:W`V$7( R28A;3!@!M'9 `:"!;4TU44#I9*I!M+B,0+Z%
M!9!E2"YG82BQ:"X)@'6^71<U+E &8 (P+K=4"E!0<V1A>2/03QG ;_IB!) @
M%B CT '0+; T,( R.C0Y(%!-,=<$5&\RJ$%04B!7FE@&`' %D <Q($D",'<$
MD >0!4!``V <H#'8=8QB:AFQ+K=;=W@`D/QG734@`V P\ 00!;$8@W\K+RPZ
M)^0+MA=#"N,*@%?Y#W!T)P0@'T 8$ 1P'%#?"&$P\!C0!;$D<2 H@3JY_QR0
M#Z =\ N 0&,Z$!_!,3 Z:0(@/Q<T*P8O2$XTYDTVH!<T1V4%L"H`'T &5#%1
M(]!%0T4@,',3\#110705X0&0(]!'4$$@55-'8#,6,3)O%S0:>0G@,1DO0:$/
MD"_O,$%('R^0%-!S$3 @@1MRW"]^,$<7.BKW60A@'!/^8PAP"7 ","+B.1 $
M\C0`SQWP'-$Z$QP0<SI"4 ;0Z2*Q<T ;@7!*`A\0&W+_%S0UX!R0`(!/MAQ1
M%- ?,O$5X6L@90# `Q$<T1F@#1\!+3H3+1 U-S W?$U (0`?T!HP`9 1,"X7
M16$7.A'Q`%A ```#`! 0``````,`$1 ``````P" $/____] ``<PP/!*0:HX
MP % ``@PP/!*0:HXP $+`"" "" &`````# ````````1@`````#A0``````
M``,``H (( 8``````, ```````!&`````!"%``````````P`%@ @@!@``````
MP ```````$8`````4H4``+<-```#``F "" &`````# ````````1@`````!
MA0```````!X`(H (( 8``````, ```````!&`````%2%```!````! ```#@N
M, `+`": "" &`````# ````````1@`````.A0````````,`)X (( 8`````
M`, ````````!&`````!&%`````````P`I@ @@!@``````P ```````$8`````
M&(4````````>`#B "" &`````# ````````1@`````VA0```0````$`````
M````'@`Y@ @@!@``````P ```````$8`````-X4```$````!`````````!X`
M.H (( 8``````, ```````!&`````#B%```!`````0`````````>`#T``0``
7``4```!213H@``````,`#33]-P``.G*%
`
end
```

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

35. [wxsig] Re: DS1994 Help

From: "Russ Chadwick" <crb5@uswest.net>
Date: Tue, 17 Oct 2000 22:31:38 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115505-2000.10.17-23.40.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Bill Hosking <billh@inficad.com>
Subject: [wxsig] DS1994 Help

> With the T238 off and RJ connector connected to my laptop, the TMEX
program
> immediately detected the ibutton and allowe me to set it. By the way, I
> used the 'non-inverted' rj11 phone cord.
>
> I loaded version 10 into T238 and turned it on with wx sensors plugged
back
> on. I expected it to automatically find/recognize the RTC - it didn't.

What happens when you put the DS1994 in backwards? Does it short the 1-Wire
bus?

> Do I have to direct the T238 to find the 1994 like I did with the rest of
> the sensors??

No, with the latest software, the T-238 should find and report the DS-1994
RTC automatically

Russ
kb0tvj.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

36. [wxsig] RE: DS1994 Help

From: William Beals <will@beals5.com>
Date: Wed, 18 Oct 2000 21:01:38 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115620-2000.10.18-22.40.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

If you have confirmed that you have at least version 1.10.0 of the
firmware, as part of the startup process it goes out and looks for the ID
of the DS1994. If it finds that ID the only way for it to fail is to have
a date code that is less than 1/1/00. The best two things I can check is
to make really sure you have a solid connection from the T238 to the DS1994
and make sure the time/date is later than 1.1.00.

If you can, measure the voltages right at the DS1994. With a volt meter
you should mostly see 5V and the occasional dip to something less as the
voltmeter tries to deal with the data pulses.

Lemme know if you find out anything intereseting.

will

-----Original Message-----
From: Bill Hosking [SMTP:billh@inficad.com]
Sent: Friday, October 13, 2000 7:56 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] DS1994 Help

I have a puzzlement here, or I'm just missing a step...
I just installed a 1994 RTC in my T238 (Thanks to Rich's help/advice)

With the T238 off and RJ connector connected to my laptop, the TMEX program
immediately detected the ibutton and allowe me to set it. By the way, I
used the 'non-inverted' rj11 phone cord.

I loaded version 10 into T238 and turned it on with wx sensors plugged back on. I expected it to automatically find/recognize the RTC - it didn't.

Rest of version 10 plays just fine.

Do I have to direct the T238 to find the 1994 like I did with the rest of the sensors??

thanks
Bill W7JSW

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(A8#`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`8````4D4Z(%MW>'-I
M9UT@1%,Q.3DT($AE;' `$@<!!8 #``X```#0!PH`$@`5``$`)@`#`#(!`2"
M`P`.````T <*`!(`% `V`!D``P!9`0$)@ $`(0```#<P-3,Q.4(V,4)!-40T
M,3%!.#4V,# P,$4X.4(S0S Y`.\&`0.0!@"@" ``(0````L``@`!`````"P`C
M```````#`"8```````L`*0```````P`N```````#`#8``````$ `.0! *P/F
M>#G `1X`< `!````& ```%)%.B!;=WAS:6==($13,3DY-"!(96QP``(!<0`!
M````%@````' .7CF`[894W&E&Q'4J%8``.B;/ D``!X`'@P!````!0```%--
M5% ``````@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A $TVE `P`'
M$/($```>``@0`0```&4```!"24Q,.DE&64]52$%614-/3D9)4DU%1%1(0519
M3U5(059%051,14%35%9%4E-)3TXQ,3 P3T942$5&25)-5T%212Q!4U!!4E1/
M1E1(15-405)455!04D]#15-3251'3T533U54``````(!"1 !````C 4``(@%
M``!$" ``3%I&=>:*])T_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .
MYG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!
M"V! ;F<Q,#,S"Z8@<D(#$&PZ"J(*A J 22AF('D(8" /<'9E0B %H&YF:7('
M@&0\('0/< 5 &#<9@6QE7&%S!4 8D ^0:0(@(-0Q+A8@+@_0;Q@0&6#+&* 8
M\G<*P&4L&C $()*L05 &\4:H!T1=7 <\"T#8&,'D 0@:05 9V\_!Y$(8 5
M`' 90 D`;VM/!" "$ 7 &_))1!NV1(!3,3DY-"X@()#_&! >P1CP%- $(!EC
M(*$;\O$"(&QY(!QP(X @(A[!_'1O'" +< ,@! `D0AGT_"!D&8 8H@$`&50D
MT1IPUP01&6$;,2\G8# ;@"&PVE0<`6('D"0Q=R1@&6#U"X!G!"!)&+ #D0]@
M!9#V:R3%`,!K&*)< = (W&^<PAP&* 9N!VP!O!I&4!U&,%N!9!T&Q(#4AOC
M5/@R,S@D0B$('W,J4RL3]QOR+- '@"\EHR:2);$@0O\G,AM@&Y ;@!=/&% I
M41RPMP> &I OAG8&\ &09P>1N0409V@?820Q(1I7'L ^:"5Q-#(S83#R&#)S
M:'4(8&PO`6\:H"KB"> @[#56'W,C$V,I4!L"!T#_)9 %("1"+! VX2C2)K0<
MT?LS]C;D= B!)`,!`#G1`_!O-D$;\B6A)8!P-[/H',1,>M,96T'@"!K;KYO
M!^ &D!@C(C(?-7DZM/\+@##Q!Y /L"CA,>L#\!<0YS'Z"O0L,#,V`4 5H %
M#QY!)< LP!!T,38@+=U&,D\TP0N .=%-'H$T<3]&,S'V141%$0L3149I+9@Q
M-#0!0"PP,3@GH.,,P4G38B!&`V$7, R2<F(6U"!(. `4L3KP6T!33510.F(7
M`6A.0 N &/ I4&0N!:!M_ETQ]4L`!F ",$MG2R L0&LCL!RP3RS ;R@P!< Q
M#C,<L '0)Z @-SHU248004U.1U1O2V=4J$%04C806 8`< 60[P<Q()!!M 5
M1P-@'A!.2!AU8FHLL4MG6W=XB0"09UTN9DAE;%2V?TA/16-$E NV%[0E)CXP
M>OYZ&G '@ (P&&!!T1RP!;&D22<M4&IU&J%M! 'G.M(K\27 <"Y=P%HF7),_
M"X =P1<0&3$E@"Z34E3>0T&1*D C@"VS*"?P`'#+'_$D45)-L&@G!" <`-U7
M8"]-T!1P'G I,?HV(\\M=QO &! ?@E)*+&8%L3\L=1DR*C$C@ M@!3!O<',<
ML"US34530!Y!"<!A_RU0,?0'<!DA!S EP"-Q`0#W16(9,S"!8A]0)% #H!^"
M_RK!/^ 8H#^1.D(/L!ZQ(:#^0B. &_(CH1RP*3 Q]%R@Y6FE)S_0;BT+@!K1
M9?'B)RJ0:C$Q'/ WD"R@_QBQ"R Q[!^Q3= 9,1K7#]#_0:$D8"VS.-,(<"R@
M&4 >P?\;(3U35F X40" !; <X0I]F<T@!E 8@#0*= Q] (@<R&@*3!E>%-Q
M9?(D)&&_'U #<2S0*5 JTB(R+PEPM06@9P,`>B^D7](M'K*Q.@!D;B=K\#'Z
M4BA"=QO!<3D+47D$(%R3(C%E_3'K1"1@6H4\TAD`++$M:_] @QOR+I,L,"IQ
M*3!YL3U(GU0C&\$Q]!V#="0_/S'Z#R<2'_ Q]$OS5S=*4_97,?I'IUD801R!
M&+ (</<)< (P*N-B!/(H,&835F.=',$Z(Y &T"JQ<T!.`7L^, ^@<AB03?(Q
M]%(P(/YU`("(1G0"7T("8&#Q=A#?`, #$211&G$8D"U68TG P#4W,#=-0"PP
M&J#7/H !D!$P+@6P9T-^"H %$?$`D3 #`! 0``````,`$1 ``````P" $/__
M__] ``<P@&,:Y'<YP % ``@P@&,:Y'<YP $+``" "" &``````# ````````
M1@`````#A0`````````,``H ((8``````, `````````!&`````!"%````````
M`P`%@@ @@!@`````P ```````$8`````4H4``+<-```#``F "" &``````#
M```````1@`````!A0```````!X`(H ((8``````, `````````!&`````%2%
M```!`````! ```#@N, `+`": "" &`````# ```````1@`````.A0``````
M``,`)X ((8``````, `````````!&`````!&%`````````P`I@ @@!@``````

```
MP `````$8`````&(4````````>`#B "" &``````# ````````1@`````V
MA0```0````$`````````'@`Y@ @@!@`````P `````$8`````-X4```$`
M```!`````````!X`.H (( 8``````, `````!&`````#B%```!`````0``
C`````>`#T``0````4```!213H@``````,`#33]-P``ZT2%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

37. [wxsig] RE: DS1994 Help

From: "Bob" <rg_davis@email.msn.com>
Date: Thu, 19 Oct 2000 11:04:26 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115687-2000.10.19-12.14.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can anybody tell me why some of the email messages I receive from this
service indicate there is an "Attachment", when there is no Attachment? It
doesn't happen on other messages.

bob/kd7cm

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, October 18, 2000 9:01 PM
Subject: [wxsig] RE: DS1994 Help

> Bill:
>
> If you have confirmed that you have at least version 1.10.0 of the
> firmware, as part of the startup process it goes out and looks for the ID
> of the DS1994. If it finds that ID the only way for it to fail is to have
> a date code that is less than 1/1/00. The best two things I can check is
> to make really sure you have a solid connection from the T238 to the
DS1994
> and make sure the time/date is later than 1.1.00.
>
> If you can, measure the voltages right at the DS1994. With a volt meter
> you should mostly see 5V and the occasional dip to something less as the
> voltmeter tries to deal with the data pulses.
>
> Lemme know if you find out anything intereseting.
>
> will
>
> -----Original Message-----
> From: Bill Hosking [SMTP:billh@inficad.com]
> Sent: Friday, October 13, 2000 7:56 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] DS1994 Help
>
> I have a puzzlement here, or I'm just missing a step...
> I just installed a 1994 RTC in my T238 (Thanks to Rich's help/advice)
>
> With the T238 off and RJ connector connected to my laptop, the TMEX
program
> immediately detected the ibutton and allowe me to set it. By the way, I
> used the 'non-inverted' rj11 phone cord.
>
> I loaded version 10 into T238 and turned it on with wx sensors plugged
back
> on. I expected it to automatically find/recognize the RTC - it didn't.
>
> Rest of version 10 plays just fine.
>
> Do I have to direct the T238 to find the 1994 like I did with the rest of
> the sensors??
>
> thanks
> Bill W7JSW
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

>
>
>

>
>
> ---
> You are currently subscribed to wxsig as: rg_davis@email.msn.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] RE: DS1994 Help

From: William Beals <will@beals5.com>
Date: Thu, 19 Oct 2000 21:43:22 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115727-2000.10.19-22.53.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob:

I get the same thing. I think it is based of the senders email using a
character set that is not recognized by your email package. As you can see
below I got your email as an attachment and I suspect it is because my
email program does not know the character set "windows-1252". As with
things like JPEG files and such, the email package just makes a file out of
it and lets the OS determine the reader for it.

This is all a guess, but so far it has passed my sanity checks.

will

-----Original Message-----
From: Bob [SMTP:rg_davis@email.msn.com]
Sent: Thursday, October 19, 2000 11:04 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: DS1994 Help

 << File: ATT00002.txt; charset = Windows-1252 >>

```
begin 600 WINMAIL.DAT
M>)\^(@X#`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`<````4D4Z(%MW>'-I
M9UT@4D4Z($13,3DY-"!(96QP``,(`06 `P`.````T <*`!,`%0`K`!8`! !.
M`0$@@ ,`#@```- '"@`3`!4`* `A``0`5@$!"8 !`"$```!#,48S,#<U,# V
M039$-#$Q03@U-C P,#!%.#E",T,P.0#K!@$#D 8`1 8``"$````+``(``0``
M``L`(P```````P`F```````+`"D```````,`+@```````P`V``````! `#D`
M@-?CY$<ZP $>`' ``0```!P```!213H@6W=X<VEG72!213H@1%,Q.3DT($AE
M;' ``@%Q``$````6`````< Z1^3C4 ?SPJ8&$=2H5@``Z)L\"0```@`>#  $`
M```%````4TU44 `````>`!\,`0```! ```!W:6QL0&)E86QS-2YC;VT``P`&
M$/6=B$T#``<0.0(``!X`"! !````90```$)/0CI)1T545$A%4T%-151(24Y'
M251(24Y+251)4T)!4T5$3T942$5314Y$15)314U!24Q54TE.1T%#2$%204-4
M15)315142$%425-.3U1214-/1TY)6D5$0EE93U5214U!24P``````@$)$ $`
M```I`P``)0,``%@$``!,6D9U%;U[KC\`"@$#`?<"I /C`@!C:,$*P'-E=# @
M!Q,"@T,`4 [F<')Q,@_F?1,*@ C((#L);S(U-4L"@ J!=@B0=VL+@&3:- Q@
M8P!0"P-C`$$+8$!N9S$P,S,+IB!P0FJB.@JB"H0*@$D$(&</L"!T:&4@''-A
M!X 800N 9RX@QB 7\!CB:R!I!4 $``@@8F$/H&0@;V9O&$0)\ 2!!"!E`, #
M$75C`) 6`"!A( ]B`-!TEP20&P$8,F$9\VYO!4 K"7 %H&<#`'H:<6)Y'"!Y
```

```
M"&$;A0JP8VMA^Q@0&3%!!" >\1Q@`Y$/H/D8<&)E"0`'X!?Q'>$>^?\:4!Q
M`Z =< &0#V '@ (PUR+!&H 7\',;\' %D!GQVQGT!9!A&_ 8<&T>T!]%QP-@
M"< 8H"!D;P>1'=+>:QW0!^ 84AQ\(@/P%-"1(6!S+3$3\#(B(!2/`_ 84!C4
M!"!L:6L8<,!*4$5'(&8#$ >1-R.R)! /8"P80Q]+(&I_&_ %0 # *J BL2L3
M&I!UWP5 &J$9X2.R*T!T!" 84NY/!? !`!S1;0N &,(8<+T)<&$$@2L0!;$9
MX"X7.OY4&/ $(!H1!T B@1@`"E#+!! L`&(N<7-O*Q *P?\9X0]P!" *L 00
M&G$E<1B0G0,`=![0#V %D&MS,;N?`_ S$!<Z"O0J@#,V`4 _%: !0"8!'- <
MP!!T,3;4("TZ,D\%$&<+@ = _P70,X$?X3HS%S8Y1#D1"Q-E.49I*0`T- %
M*H Q'#@P`4 ,T#W38B!&%P-A%R ,DF(6TR!;4P!-5% Z<F=?9!)A%'!S0!N3
M+FUSY&XN!:!M71<U/P`&8*\",#]G,H (<'- P'DL`,Y/', 7`!SA,3DL``'0
M0SY@1' Q.C T#^!-"4('5&]"V$%04B#\5U@&`"1!!S$94 (P!)!+!Y %0$<#
M8'5P0@AUC&)J)%$_9UMW> "0!&==!_!%.B!$4_5$@#E%4$@A0$BF/$\Y8\<X
ME NV%T,@/#P_$"LQ$4K@05141-$P,B[9#-!T.QQC'1(]1Q HJ;@@/CX*XPJ
M$?$`4G ````#`! 0``````,`$1 "`````P" $/____] ``<P(!XP@$<ZP %
M``@P(!XP@$<ZP $+``" "" &``````# ````````1@`````#A0````````,`
M`H (( 8``````, ````````!&`````!"%`````````P`%@ @@!@``````P ``
M`````$8`````4H4``+<-```#``F "" &`````# ````````1@`````!A0``
M`````!X`(H (( 8``````, ````````!&`````%2%```!````! ```#@N, `+
M`": "" &``````# ````````1@`````.A0````````,`)X (( 8``````, `
M``````!&`````!&%````````P`I@ @@!@``````P ````````$8`````&(4`
M````````>`#B "" &``````# ````````1@`````VA0```0````$`````````
M'@`Y@ @@!@``````P ````````$8``````-X4```$````!`````````!X`.H (
M( 8``````, ````````!&`````#B%```!`````0`````````>`#T``0````4`
4``!213H@``````,`#33]-P``YV&%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

39. [wxsig] APRSWXNET status

From: "Russ Chadwick" <crb5@uswest.net>
Date: Fri, 20 Oct 2000 07:09:47 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115770-2000.10.20-08.19.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The APRSWXNET Quality Checking and Monitoring System (QCMS) has been down
the past two days due to a password mix-up in QCMS. That problem was fixed
early this morning and things are working again. However, there are still
only six stations (ap001-ap006) being accepted by QCMS and the elevation and
position errors I mentioned earlier still persist. Hopefully that will be
fixed soon and tenn stations will be accepted by QCMS.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Re: APRSWXNET status

From: "Antonio Sergio Sena" <aserginho@hotmail.com>
Date: Fri, 20 Oct 2000 14:40:10 WEST
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115778-2000.10.20-08.49.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can anyone here tell me the url for the APRSWXNET ??
I have to do a small presentation on APRS WX, and i would be much apreciated
if someone point me some good info that i havent found yet.
Thanks!

73 de CT2GPW

>
>The APRSWXNET Quality Checking and Monitoring System (QCMS) has been down

****
Antonio Sergio Sena

BEng Electrical & Electronic Engeneering
Heriot-Watt University - Edinburgh
www.qsl.net/ct2gpw

_____
Get Your Private, Free E-mail from MSN Hotmail at http://www.hotmail.com.

Share information about yourself, create your own public profile at
http://profiles.msn.com.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] RE: DS1994 Help

From: "Bob" <rg_davis@email.msn.com>
Date: Fri, 20 Oct 2000 09:01:14 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115819-2000.10.20-10.11.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will;

Thanks. It is no biggy, I was just curious.

bob

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Thursday, October 19, 2000 9:43 PM
Subject: [wxsig] RE: DS1994 Help

> Bob:
>
> I get the same thing. I think it is based of the senders email using a
> character set that is not recognized by your email package. As you can
see
> below I got your email as an attachment and I suspect it is because my
> email program does not know the character set "windows-1252". As with
> things like JPEG files and such, the email package just makes a file out
of
> it and lets the OS determine the reader for it.
>
> This is all a guess, but so far it has passed my sanity checks.
>
> will
>
> -----Original Message-----
> From: Bob [SMTP:rg_davis@email.msn.com]
> Sent: Thursday, October 19, 2000 11:04 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: DS1994 Help
>
> << File: ATT00002.txt; charset = Windows-1252 >>
>
>

>
>
> ---
> You are currently subscribed to wxsig as: rg_davis@email.msn.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] RE: APRSWXNET status

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 20 Oct 2000 13:00:47 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115834-2000.10.20-12.09.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

so why are there only 6 stations being accepted? You said I was AP010
Is it something I need to fix or they need to fix???

73 de brian, n1bq

> -----Original Message-----
> From: Russ Chadwick
> Sent: Friday, October 20, 2000 9:10 AM
>
> The APRSWXNET Quality Checking and Monitoring System (QCMS)
> has been down
> the past two days due to a password mix-up in QCMS. That
> problem was fixed
> early this morning and things are working again. However,
> there are still
> only six stations (ap001-ap006) being accepted by QCMS and
> the elevation and
> position errors I mentioned earlier still persist. Hopefully
> that will be
> fixed soon and tenn stations will be accepted by QCMS.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] RE: APRSWXNET status

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Fri, 20 Oct 2000 13:23:11 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-115842-2000.10.20-13.33.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob

Russ mentioned in an earlier post that he has submitted the station data to
QCMS for all ten stations, but that some data entry errors and other issues
prevented the stations from being displayed properly. Please see the
attached message from Russ.

Antonio, try this link for QCMS.

http://www-sdd.fsl.noaa.gov/MSAS/region_plots.html

Rich Beckwith - WN0X

Russ Chadwick Wrote:

Right now, 10 weather stations are included in the data file that goes from
findu.com to the Quality Checking and Monitoring System (QCMS) input here in
Boulder every 15 minutes. However, only six of these stations are entered
in QCMS and so the other 4 are rejected. I submitted the updated meta-file
about 2 weeks ago to the QCMS person who sends it to the computer people.
Unfortunately, my QCMS contact has had a death in his family, and that has
resulted in some delays.

Presently, AP001 and AP003 have small elevation errors and that affects
potential temperature which is one of the five parameters checked and so
there have been some potential temperature labeled as questionable.
Hopefully, more accurate elevations for these two stations will help that.
AP004 has a large position error due to my fumble finger typing and so that
quality checking is invalid until the position is corrected. AP006 may have
a bad position, as I put in the correct numbers but left a space between the
minus sign and the longitude number. All of these will be fixed when the
new station.txt file is submitted, checked out and input to the operational
QCMS program. It will also increase the number of stations to ten. As soon
as I find out that the change has been made, I'll post it here.

I've been asked if I could prepare a information write-up on APRSWXNET and

I'll commit to do that in the next few weeks. Some information about QCMS
is contained on this web page:

http://www-sdd.fsl.noaa.gov/MSAS/qcms.html

Russ
kb0tvj

You are currently subscribed to wxsig as: wn0x@earthlink.net
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] [oot] modem chip

From: "lucky@ISRG.ITB.ac.id" <lucky@ISRG.ITB.ac.id>
Date: Thu, 26 Oct 2000 09:08:21 +0700 (JAVT)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116525-2000.10.25-21.19.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

hi all.

i was wondering if anyone can give me some (many) lists of better/best
alternatives to modem chip which can be used in packet radio transmission,
like tcm3105, mx614. currently i was working on simple wxstation project
(using sensor from davis instrument) that supposed to be capable of
transmitting the data via ax.25 frame.
i am a newbie in this field, and eager to learn more about packet
radio. i'm really grateful for any kind of help/information you may
generously provide. thanks in advance. sorry for being oot.

best regards,

-lucky-
yd1uex
sukabumi-indonesia

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] Re: [oot] modem chip

From: "Doug McKinney" <Design@mt.to>
Date: Wed, 25 Oct 2000 20:52:54 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116558-2000.10.26-01.03.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The 3105 is discontinued. The MX614 is an excellent chip. Also, a PIC
microcontroller (or most any micro controller) can be made to provide the
tones (www.byonics.com Tiny Trak) or use the PIC-E from TAPR www.tapr.org
uses a PIC and the MX614. The PIC-E is what TAPR calls an Enabling
Technology Kit. It is a programmable and multifunctional modem based
training kit.

Doug

----- Original Message -----
From: <lucky@ISRG.ITB.ac.id>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, October 25, 2000 7:08 PM
Subject: [wxsig] [oot] modem chip

> hi all.
>
> i was wondering if anyone can give me some (many) lists of better/best
> alternatives to modem chip which can be used in packet radio transmission,
> like tcm3105, mx614. currently i was working on simple wxstation project
> (using sensor from davis instrument) that supposed to be capable of
> transmitting the data via ax.25 frame.

> i am a newbie in this field, and eager to learn more about packet
> radio. i'm really grateful for any kind of help/information you may
> generously provide. thanks in advance. sorry for being oot.
>
> best regards,
>
> -lucky-
> yd1uex
> sukabumi-indonesia
>
>
> ---
> You are currently subscribed to wxsig as: Design@mt.to
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] Re: [oot] 73M223 modem chip

From: "Rich" <n0rul@kscable.com>
Date: Thu, 26 Oct 2000 14:53:33 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116620-2000.10.26-15.01.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you need an alternative to the MX614 then check out the TDK line.

TDK produces a low power 1200bps FSK modem.
The part number is 73M223.
It is designed to use a 3.18mhz crystal.

I found the 73M223 datasheet at
http://www.tsc.tdk.com/modem/73m223.pdf
or
http://www.ee.pdx.edu/~aess/Resources/DataSheets/Communications/TSC73M223.pd
f

Rich
n0rul
mailto:n0rul@kscable.com

----- Original Message -----
> Subject: [wxsig] [oot] modem chip
...
> > i was wondering if anyone can give me some (many) lists of better/best
> > alternatives to modem chip which can be used in packet radio
transmission,
> > like tcm3105, mx614. currently i was working on simple wxstation project
...
> > yd1uex
> > sukabumi-indonesia

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

47. [wxsig] Re: [oot] modem chip

From: GS <gsanders1@bigfoot.com>
Date: Thu, 26 Oct 2000 21:48:42 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116665-2000.10.26-20.58.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug McKinney wrote:
>
> The 3105 is discontinued. The MX614 is an excellent chip. Also, a PIC
> microcontroller (or most any micro controller) can be made to provide the
> tones (www.byonics.com Tiny Trak) or use the PIC-E from TAPR www.tapr.org
> uses a PIC and the MX614. The PIC-E is what TAPR calls an Enabling
> Technology Kit. It is a programmable and multifunctional modem based
> training kit.

Since the 3105 is getting difficult to find, is there anything that

will sub it?

I have a couple Pac-Comm TNC's that have defective 3105's and I'd
like to get them running again.

Can a MX614 be made to emulate a 3105, or would it require adding some
smarts in the form of a PIC?

Gary Sanders

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Fw: [weather] Weather Station

From: "Russ Chadwick" <crb5@qwest.net>
Date: Fri, 27 Oct 2000 20:19:58 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116795-2000.10.27-22.01.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This was posted to the Dallas Semiconductor e-mail reflector today. It is
from a Mexican company that might be supplying 1-Wire weather stations in
kit form in the very near future.

Russ
kb0tvj

> -----Original Message-----
> From: Aitor Arrieta [SMTP:aag@aag.com.mx]
> Sent: Friday, October 27, 2000 12:24 PM
> To: weather@dalsemi.com
> Subject: [weather] Weather Station
>
> Hi to all.
> As I told you in a previous e-mail ,we are working now to bring you
> the 1-Wire aeometer based on the original design of Dallas
> Semiconductor. It has not been an easy task, mainly due to
> bureaucratic problems. Everything is almost done, we expect to start
> accepting orders by the end of the next week, and we expect to start
> shipping 10 November. I'll keep informed this SIG of the progress of
> this project.
> Thank you all for your patience
> Aitor Arrieta G.
> Automatizacion Aplicada a Gasolineras S.A. de C.V.
> Lat.20º35'11''N, Lng.100º24'12''W

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] EMWIN gear

From: kbrown@powerhouseproductions.com (Kevin Brown)
Date: Sat, 28 Oct 2000 10:15:40 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116846-2000.10.28-10.25.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am looking for some ground station EMWIN gear that someone might have for
sale. Plz contact me in private: kc0czi@midmoskywarn.net if you might have
gear available.

Thanks!

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] Huh???

From: "Brian B. Riley, N1BQ" <n1bq@wulfden.org>
Date: Sun, 29 Oct 2000 00:30:24 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116944-2000.10.28-23.40.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Still Running 1.09 -- just checked the findu site and it said

---
Last report received 2 seconds ago

Wind from 390 degrees @ 6 MPH Gusts to 10
Temp 21
---

  390 degrees ?????????????

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418   NJQRP #274
QRP-L #2276   Zombie #768

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] Re: Huh???

From: "Russ Chadwick" <crb5@qwest.net>
Date: Sat, 28 Oct 2000 23:09:05 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116956-2000.10.29-23.18.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Brian B. Riley, N1BQ <n1bq@wulfden.org>

> Still Running 1.09 -- just checked the findu site and it said
>
> ---
> Last report received 2 seconds ago
>
> Wind from 390 degrees @ 6 MPH Gusts to 10
> Temp 21
> ---
>
>   390 degrees ?????????????
>

Brian,

The consensus average of azimuth could result in numbers as high as 472.5
degrees. This can only happen for averaged wind direction, not 5 second
wind direction. The T-238 software is supposed to check and if the averaged
wind direction is greater than 360, it should subtract 360 to get a number
between 0 and 360 for averaged wind direction.

I checked your data on findu.con and note that your wind direction has been
northeast for several hours with good stready winds. I'm sure that the
result should have been 30 degrees (390 - 360). Maybe that checking and
subracting 360 part of the T-238 software is not getting executed.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Re: Huh???

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sun, 29 Oct 2000 10:40:11 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-116987-2000.10.29-09.50.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: Russ Chadwick
> Sent: Sunday, October 29, 2000 1:09 AM

  [snip]

>
> I checked your data on findu.con and note that your wind
> direction has been northeast for several hours with good
> stready winds. I'm sure that the result should have been
> 30 degrees (390 - 360). Maybe that checking and
> subracting 360 part of the T-238 software is not getting
> executed.

 You have that right, the wind has been roaring here for the last 36-40
hours. My wind generator which is 30 feet above the anemometer has
generated a net gain of 3 KW hours of juice to the batteries in the last
36 hours. That is a 3 KW hour net gain concurrent with 8-10 KW hours of
usage! There hasn't been much sun ... in fact its snowing right now. The
wind here is light from the E and W and strongest from the South. N or
NE winds tend to be gusty but strong because of the specific topology
here.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Re: Huh???

From: "Russ Chadwick" <crb5@qwest.net>
Date: Sun, 29 Oct 2000 10:10:10 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117000-2000.10.29-11.20.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

---- Original Message -----
From: Brian B. Riley <brianbr@wulfden.org>
>
> You have that right, the wind has been roaring here for the last 36-40
> hours. My wind generator which is 30 feet above the anemometer has
> generated a net gain of 3 KW hours of juice to the batteries in the last
> 36 hours. That is a 3 KW hour net gain concurrent with 8-10 KW hours of
> usage! There hasn't been much sun ... in fact its snowing right now. The
> wind here is light from the E and W and strongest from the South. N or
> NE winds tend to be gusty but strong because of the specific topology
> here.
>
 Hi Brian,

Looking at the national visible satellite picture on

http://www-frd.fsl.noaa.gov/mab/sat/

and then at your local weather in NH

http://wx.findu.com/n1bq-3

one sees well what is meant by a "Noreaster". Keep close to the fire place.

It's a nice sunny day here in Colorado today.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Bad wind direction readings

From: William Beals <will@beals5.com>
Date: Sun, 29 Oct 2000 22:12:33 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117048-2000.10.29-23.24.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I am finally starting to get back to working on the weather station. I
think I may have found the cause of the bad wind direction readings. It
does involve bouncy readings around 330 degrees, but it is virtually
impossible to simulate as simple static readings won't reproduce the
problem. It requires noisy readings to generate the problem. I need to
confirm I can reproduce the problem before I can confirm it is the issue.
 I'll keep you posted.

Thanks all for providing the clues on what may be causing the problem.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] Weather Stations Available

From: "Rick Austin" <rickaustin@attglobal.net>
Date: Mon, 30 Oct 2000 9:1:10
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117090-2000.10.30-09.10.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,

A neighbor of mine saw my Dallas Semiconductor Weather Station in early 1999 and got so excited he bought one for himself and several to give as gifts to family members at Christmas. He couldn't get the serial interface working on his personal unit and never got around to troubleshooting the problem. He eventually bought each of them a Garmin GPS III (wish I was on his gift list!)after seeing mine (copycat!). The Weather Station gift units have been stored away in the original sealed shipping box that came from Dallas Semi. It's still unopened with the units in their boxes inside waiting to be liberated. I suggested he sell them on EBay a couple of months ago but he a curious kind of computer savant. By this I mean, even though he builds and programs control systems for a living (big ones that control entire bread baking factories or sewrage treatment plants), he is Internet challenged. He got rid of the ISP, that I set him up with so he would have decent Internet access, and returned to the warm womb of AOL, where he resides to this day. AOL scrambled the links I sent him to the Weather Station auctions on Ebay so he never even saw them.

Sell stuff on Ebay? Too complicated! Go figure. So anywho, he has agreed to let me sell them for him and I have listed the first one on Ebay. Since these units are NLA from Dallas Semi, if you need one, you might want to check it out. I will be selling three of them, one at a time.

Rick Austin in Austin
KD5LAQ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] Re: Bad wind direction readings

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 30 Oct 2000 16:47:07 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117156-2000.10.30-15.57.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
>From: William Beals
>Sent: Monday, October 30, 2000 12:13 AM

[snip]

>I am finally starting to get back to working on the weather station. I
>think I may have found the cause of the bad wind direction readings.
It
>does involve bouncy readings around 330 degrees, but it is virtually
>impossible to simulate as simple static readings won't reproduce the

>problem. It requires noisy readings to generate the problem. I need
to
>confirm I can reproduce the problem before I can confirm it is the
issue.

 I can confirm it, I can confirm it .... my wind for 40 hours was highly
erratic from about 300 to 040. I saw figures ranging up from 392 to
500+ the numbers were crazy, BUT ... findu corrected the number in its
graphic display even if it gave the numbers screwy in the text report
...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] Antarctica DX Satellite Trip Coming up!

From: " Ronald Ross" <ronald@thistle.org>
Date: Mon, 30 Oct 2000 21:25:56 -0800
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "TAPR APRS Satellite Special Interest Group" <aprssat@lists.tapr.org>,
        "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117201-2000.10.30-23.37.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Folks,

Tomorrow I will be returning to Antarctica to begin
a two month expedition in the mountains of Queen Maud Land.
I will be assisting Polar Explorer Alain Hubert, in his
wall climb of Holtanna, a 5000ft peak.

Location ~72S 8E.

Similar to the last years trip I shall be taking an Amateur Satellite
Radio Station, in order to transmit text and images from Antarctica
back to our website here in San Francisco. Messages will be
distributed through a mailing list and images will be posted on the
WebSite. I shall try to send a travel report and a new image each day.

In addition, I will be taking with me two APRS enabled weather
stations. These have been built by myself and 3 students of
Professor Twiggs at Stanford University. The weather stations will
transmit data via SUNSAT to an antarctic ground station or igate.
The weather data should show up on www.findu.com

I'd like to thank Johann ZR1CBC, for all the assistance he has
provided me with SUNSAT in the testing of our stations over the
last three months. Several others I'd like to thank are, Scott Anderson
for aprs GS work, Steve Bible, for EasyTrak, Rob Wittner for APRS-CE
and Al Lowe for antennas.

Once again Roy, W0SL have generously offered to provide
assistance in downloading files and Ed, KE6IZN for handling the
website.

I will also try contacts on UO-14 if anyone is in the footprint??

For those not active on the Pacsats they can subscribe to my
mailing list by following the instructions on this page
www.thistle.org/pages%20folder/subscribe.html

Please check out my website at http://www.thistle.org to find out
more about the trip in the next few weeks.

hope to hear from you on the birds
73's
Ronald Ross
KE6JAB

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

58. [wxsig] Wind direction bug found

From: William Beals <will@beals5.com>
Date: Tue, 31 Oct 2000 22:09:49 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117373-2000.10.31-23.23.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I found the wind direction bug. It was in the location I thought, but
turned out to be a simpler bug than I thought. It was an overflow problem,
but it was with an array index, not the math associated with the indexed
data.

I wanted to take care of a few more little issues before releasing the next
code drop. The first is a request was to have seperate controls for baud
rate versus operating mode. I am embarassed to say that I have forgotten
what my note meant on the second item. I wrote down "no rain guage on
power cycle" does anyone remember what that was in reference to?

will

(nice to be back working this again)

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

November 2000

Original source file: wxsig.0011
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0011

1. [wxsig] Re: Wind direction bug found

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Wed, 01 Nov 2000 06:23:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117408-2000.11.01-06.35.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think we wanted to have to manually add the rain gage. We did not want
the system to look for a rain gage during power-up. This was for our
friends in the Great White North whose precipitation tends to become
solid. I guess they remove them around this time of year.
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] NIB Dallas wx station for sale

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Wed, 01 Nov 2000 13:49:51 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117467-2000.11.01-14.00.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have one Dallas wx station for sale $80.00 It is new in the box never
assembled. (no rain gage) A ham buddy of mine purchased it the same day
I bought mine but he does not have the time to fool with it. The box has
been opened to verify all the parts are present. This is not an auction
and the unit is priced to only recover original cost. I know demand is
high so to be fair I will take all serious buyers requests between now
and 1800 UTC Nov. 2, 2000. (noon tomorrow CST) If more than one is
interested I will put names in a hat and draw a winner.
Winner to pay actual shipping via UPS or USPS
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Re: NIB Dallas wx station for sale

From: Guy Story <kc5goi@tapr.org>
Date: Wed, 1 Nov 2000 15:01:46 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117503-2000.11.01-15.12.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill, I represent the Denton County ARC in Texas. We would like to
purchase the WX station.

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] RE: Wind direction bug found

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Wed, 1 Nov 2000 16:24:29 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117507-2000.11.01-15.34.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From:William Beals
> Sent: Wednesday, November 01, 2000 12:10 AM

[snip]

> I wanted to take care of a few more little issues before
> releasing the next code drop. The first is a request
> was to have seperate controls for baud rate versus
> operating mode. I am embarassed to say that I
> have forgotten what my note meant on the second item.
> I wrote down "no rain guage on power cycle" does
> anyone remember what that was in reference to?

Could it be my request to be able to remove the rain gauge after it
has been installed and recognized for winter non-use ...

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

5. [wxsig] Re: NIB Dallas wx station for sale

From: VTuff59795@aol.com
Date: Wed, 1 Nov 2000 16:30:37 EST
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117510-2000.11.01-15.42.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Bill,
YES, I'm interested.

73's

Vic
G7PYR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] RE: Wind direction bug found

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 01 Nov 2000 15:43:36 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117511-2000.11.01-15.54.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yep, I remember it that way as well. For some reason your wx conditions were such that the rain gauge
wouldn't be of much use, and removing the rain gauge after it was set up was a hassle.

>>> brianbr@wulfden.org 11/01/00 03:24PM >>>

> -----Original Message-----
> From:William Beals
> Sent: Wednesday, November 01, 2000 12:10 AM

[snip]

> I wanted to take care of a few more little issues before
> releasing the next code drop. The first is a request
> was to have seperate controls for baud rate versus
> operating mode. I am embarassed to say that I
> have forgotten what my note meant on the second item.
> I wrote down "no rain guage on power cycle" does
> anyone remember what that was in reference to?

Could it be my request to be able to remove the rain gauge after it
has been installed and recognized for winter non-use ...

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] Re: NIB Dallas wx station for sale

From: kbrown@powerhouseproductions.com (Kevin Brown)
Date: Wed, 1 Nov 2000 16:51:44 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117516-2000.11.01-17.00.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill,

I am interested.

Kevin, KC0CZI

----- Original Message -----
From: "Bill Ellis" <rwsw60@email.sps.mot.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, November 01, 2000 1:49 PM
Subject: [wxsig] NIB Dallas wx station for sale

: I have one Dallas wx station for sale $80.00 It is new in the box never
: assembled. (no rain gage) A ham buddy of mine purchased it the same day
: I bought mine but he does not have the time to fool with it. The box has
: been opened to verify all the parts are present. This is not an auction
: and the unit is priced to only recover original cost. I know demand is
: high so to be fair I will take all serious buyers requests between now
: and 1800 UTC Nov. 2, 2000. (noon tomorrow CST) If more than one is
: interested I will put names in a hat and draw a winner.
: Winner to pay actual shipping via UPS or USPS
: Bill N5ZTW
:
: ---
: You are currently subscribed to wxsig as: kbrown@powerhouseproductions.com
: To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
:

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] Re: Wind direction bug found

From: Doug <dbuhrman@radiks.net>
Date: Wed, 01 Nov 2000 21:34:46 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117594-2000.11.01-21.45.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:

> Folks:
>
> I found the wind direction bug. It was in the location I thought, but
> turned out to be a simpler bug than I thought. It was an overflow problem,
> but it was with an array index, not the math associated with the indexed
> data.
>
> I wanted to take care of a few more little issues before releasing the next
> code drop. The first is a request was to have seperate controls for baud
> rate versus operating mode. I am embarassed to say that I have forgotten
> what my note meant on the second item. I wrote down "no rain guage on
> power cycle" does anyone remember what that was in reference to?
>
> will
>
> (nice to be back working this again)
>
>

I can. I noticed on my unit when it was power-cycled that the rain gauge would disappear.
This happened on two different boards both using ver 1.10.
I see another message that stated this may have been a "feature". I don't think that would be
good to have on a remote station. A different way to manually remove a rain gauge would
be better. Just my 2-cents.

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] Re: NIB Dallas wx station for sale

From: "Bob" <rg_davis@email.msn.com>
Date: Thu, 2 Nov 2000 07:55:51 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117677-2000.11.02-09.08.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm Interested.

bob/kd7cm

----- Original Message -----
From: "Bill Ellis" <rwsw60@email.sps.mot.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, November 01, 2000 12:49 PM
Subject: [wxsig] NIB Dallas wx station for sale

> I have one Dallas wx station for sale $80.00 It is new in the box never
> assembled. (no rain gage) A ham buddy of mine purchased it the same day
> I bought mine but he does not have the time to fool with it. The box has
> been opened to verify all the parts are present. This is not an auction
> and the unit is priced to only recover original cost. I know demand is
> high so to be fair I will take all serious buyers requests between now
> and 1800 UTC Nov. 2, 2000. (noon tomorrow CST) If more than one is
> interested I will put names in a hat and draw a winner.
> Winner to pay actual shipping via UPS or USPS
> Bill N5ZTW
>
> ---
> You are currently subscribed to wxsig as: rg_davis@email.msn.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] Wx station sale

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Thu, 02 Nov 2000 13:47:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117721-2000.11.02-13.58.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I had nine interested parties from wxsig wanting to purchase the Dallas
Wx station.
Nine little slips of paper were tossed in the hard hat and Rich Beckwith
was drawn first.
Congratulations Rich! I'll get with you regarding the details...I hope
everyone feels this was a fair way to sell it.
Thank You,
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] Re: Wx station sale

From: VTuff59795@aol.com
Date: Thu, 2 Nov 2000 17:15:39 EST
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117730-2000.11.02-16.25.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Bill,
        that was fair, congratulations Rich.

73's

Vic

G7PYR

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

12. [wxsig] Re: Wx station sale

From: Gerry Creager <gerry@cs.tamu.edu>
Date: Thu, 02 Nov 2000 17:04:45 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117734-2000.11.02-17.15.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill Ellis wrote:
>
> I had nine interested parties from wxsig wanting to purchase the Dallas
> Wx station.
> Nine little slips of paper were tossed in the hard hat and Rich Beckwith
> was drawn first.
> Congratulations Rich! I'll get with you regarding the details...I hope
> everyone feels this was a fair way to sell it.

Emminently fair. I just wish I'd seen this in time to make it _10_
little slips of paper. Guess I'll have to ait for the guys in Mexico!

73, gerry
--
Gerry Creager | Never ascribe to Malice that
AATLT | which can adequately be
Texas A&M University | explained by Stupidity.
979.458.4020 (Phone) | -- Lazarus Long
979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Dead Wx

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Fri, 3 Nov 2000 08:19:52 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117855-2000.11.03-08.34.34--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My dad visited me this week and brought with him the Wx array I put up on
his house in Wyoming last June. It had quit working with his laptop and I
was going to integrate the T238 to it and return it. At first I thought he
had munged the settings on the computer, but I've now confirmed that the Wx
sensor board has died. The only indication I get from my two T238's is
"One-wire bus is shorted".

-and speaking of T238's. . .what box works best to mount within? The 4x6
box jap shack sells is too tight a fit.

I have extensive experience with fixing electronics, but before I start
cutting traces to isolate the dead element on the bus, I'm asking the
collective for tips.

What sayeth Y'all?

Kyle   KCØIQE
Kyle.ehler@lsil.com <mailto:Kyle.ehler@lsil.com>
Wichita, Ks.

14. [wxsig] Re: Dead Wx

From: "Warren A Merkel" <zddlist@perfectbox.net>
Date: Fri, 3 Nov 2000 09:40:26 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: Kyle.ehler@lsil.com
Message-ID: <LYR15067-117856-2000.11.03-08.49.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kyle,
You should check the DS9502 Electro Static Suppression Diode
first. It shorts out the buss when doing it's job. If you lift one side
and the wx station comes up, you found the problem.
It will work without it, however the protection from whatever hit it the
first time will lost!

It is marked on the WS-1 pcb screening or look at the documents
on at http://www.ibutton.com/weather/index.html for the pcb layout

> My dad visited me this week and brought with him the Wx array I put up
> on his house in Wyoming last June. It had quit working with his
> laptop and I was going to integrate the T238 to it and return it. At
> first I thought he had munged the settings on the computer, but I've
> now confirmed that the Wx sensor board has died. The only indication
> I get from my two T238's is "One-wire bus is shorted".
>
> -and speaking of T238's. . .what box works best to mount within? The
> 4x6 box jap shack sells is too tight a fit.
>
> I have extensive experience with fixing electronics, but before I
> start cutting traces to isolate the dead element on the bus, I'm
> asking the collective for tips.
>
> What sayeth Y'all?
>
>
> Kyle   KCØIQE
> Kyle.ehler@lsil.com <mailto:Kyle.ehler@lsil.com>
> Wichita, Ks.
>
>

Warren Merkel
Client Profiles, Inc.
warren@clientprofiles.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] Re: Dead Wx

From: William Beals <will@beals5.com>
Date: Fri, 3 Nov 2000 18:07:02 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117944-2000.11.03-19.55.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kyle:

Fully agree with Warren. That part is troublesom. Barring that your next
best bet is to remove 1-wire devices one at a time. Since they are all
surface mount, this is hard do do without destroying the parts though. One
obvious question: You HAVE checked that it is not the cable, right?

will

-----Original Message-----
From: Warren A Merkel [SMTP:zddlist@perfectbox.net]
Sent: Friday, November 03, 2000 7:40 AM
To: TAPR WX Special Interest Group
Cc: Kyle.ehler@lsil.com
Subject: [wxsig] Re: Dead Wx

Kyle,
You should check the DS9502 Electro Static Suppression Diode
first. It shorts out the buss when doing it's job. If you lift one side
and the wx station comes up, you found the problem.
It will work without it, however the protection from whatever hit it the
first time will lost!

It is marked on the WS-1 pcb screening or look at the documents
on at http://www.ibutton.com/weather/index.html for the pcb layout

> My dad visited me this week and brought with him the Wx array I put up
> on his house in Wyoming last June. It had quit working with his
> laptop and I was going to integrate the T238 to it and return it. At
> first I thought he had munged the settings on the computer, but I've
> now confirmed that the Wx sensor board has died. The only indication

> I get from my two T238's is "One-wire bus is shorted".
>
> -and speaking of T238's. . .what box works best to mount within? The
> 4x6 box jap shack sells is too tight a fit.
>
> I have extensive experience with fixing electronics, but before I
> start cutting traces to isolate the dead element on the bus, I'm
> asking the collective for tips.
>
> What sayeth Y'all?
>
>
> Kyle   KCOIQE
> Kyle.ehler@lsil.com <mailto:Kyle.ehler@lsil.com>
> Wichita, Ks.
>
>

Warren Merkel
Client Profiles, Inc.
warren@clientprofiles.com

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(AT!`0:0" `$`````````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !`````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`8````4D4Z(%MW>'-I
M9UT@4F4Z($1E860@5W@`:0<!!8 #``X```#0!PL``P`2``<``@`%``4!`2"
M`P`.````T <+``,`$@`%``\`!0`0`0$)@ $`(0```#8P-C-#,T$Y041",40T
M,3%!.#4V,# P,$4X.4(S0S Y``P'`0.0!@#L"0``(0````L``@`!````"P`C
M```````#`"8``````L`*0```````P`N```````#`#8``````$ `.0#)$>*
M^T7 `1X`< `!````& ```%)%.B!;=WAS:6==(%)E.B!$96%D(%=X``(!<0`!
M````%@````' 1?N*-JG#8V&QK1`4J%8``.B;/ D``!X`'@P!````!0```%--
M5% ``````!@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A#,"Y[1`P`'
M$/L%```>``@0`0```&4```!+64Q%.D953$Q904=21457251(5T%24D5.5$A!
M5%!!4E1)4U123U5"3$533TU"05)224Y'5$A!5%E/55).15A40D535$)%5$E3
M5$]214U/5D4Q+5=)4D5$159)0T533TY%051!```````(!"1 !````V 8``-0&
M```D"@``3%I&=>Y#!^H_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .
MYG!R<3(/YGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!
M"V! ;F<Q,#,S"Z8@X$MY;&4Z"J(*A J @$9U;&QY(&$)PL(@`_!T:"!7"L)
M<.!N+B @5]P!4 *L=,%0 0`('0#8'4"8 >0VP-P&7%"&2$+@&<:8!FR0GD(
M82!N97@%0&)G!Y <DAHD;R)< 1@=MD8H#$M`_ )<" !`!1PWF,'D0(@&* 9
MP6$:8 =QW1EQ4PN 'L ;L64801Y1ZP= `R!S"'!F`- 8H 1@>G4","P;L1I!
M&D$/<63_'G =@"+Q&,((8 5 `0`<T'T#8'D;A!B@&?(:42.!9\IH&7%/'Q%O
M8A1P"&"=!"!Q"E <T"8@;CH9@)9"& @2$%612![#V %D&L)@!NT&- :,F[V
M;P5)()C`: 7$"(`!1#Y)6!T/Q=*`_ 8(!=*"O3P;&DS-@% %: !0!$P"RCP
M!9!T$'0Q-B M?2WR3RG1"X '0 70!Y!S_1A@92WS%T8M!"S1"Q,M!F!I+3$T
M- % +% Q'#@P`4 ,T#&38B!&]P-A%S ,DF(/T!D4#^ NP09R)_ #(%M33510
M,#IZ9&0L4!S00'!-!)!F+3$&X'@N'&!T?ET713+ !F ",#,G,N!IZ&1A>2(`
M3AW1!M $D!X@%C B``'0,B @-SI+,; /X$TVAU1O,R=4:$%04AD`6 8`-9!C
MN0<Q($D", 20',)'&H$R<#:'0V,S)Q;R+F4B:!<0<D!L`)!L+FT%H&TVB!J@
M:BTQ,R=;9'=X`)!G70?P%R @R$1E82+05W@OGS"JORQ4"[874PKC"H 6\BP7
M1'4G(G,C@6PBT">S)'-$T%,Y-3 18$47$"U KP-@!@`!D!^08T !<!$P_R[A
M)L%!P"8@`0!%13%@#Y#Z=!EQ205 1J$DXB.2)(+V8B9 !"!W(' #H"+P&X*U
M&- G!"!J)?!*XF8<`OX@+% !@![S`)!*!P!P*!+]&*%X(2!(LDFA/U$'D3SP
M_R(`3A("$"'03[0L\1JQ&P+_%T1+$2KR&+ %L$=0(U88T/LB`". =QZ0.,%2
M!2TB29+_`U),<1G 50,B,"AC)()*.>\?@U-D"0`<T"$72DL1&D&?`, T82+0
M2:$D@E=3,8#]&>!C,L $\0GA&X(%L0D`GF]'4!G!)((B\&-U!X _`C $(1=3
M2:$9P2H`='"0.B\O=U]P+FE,,#\"0 (@/T)?8$'@(&%R+^L4P1QP+BH`;0,@
M`A!5-;];X0M@'!$%02M-%X8^!=#_&$ X$"+0%' `D"T@(M!8L=LB(U3P95T1
M3Z%B&H$I\?\8M"(P5G!;0U @&2$X(#P@_QG@(Z$\]F102:$B,B.!#Z#K&C #
MH%<<$&T;@@M@'-'^2B'0'\)+$0]P(M F<"B!?U/"&X)F]0\P9 4+8 4P;Y9P
M9B-H4'=JX"!G3.,_'7$+@"T@"<!6L21S5#*\,SAO,Q]13Z$)<'0(</<#H!C0
M&7%!+5!D!5@T:%#O)21>X1B@:\)M(= O($^T_P^A'Y 6`![B*10#<&AQ!)#W
M(@!?P3P@)QW@8_8HX ?@_06@;DJ1!X H%6>%#Z `@%\%L0;@(K(/< 0@9 B0

```
M9/L9<R71;A@Q%,$>L%!C8_:O:% O( 5 5D-M&$!T4\#W<$--41I!(B6Q'B1,
M,1HRLTM#"8 B+F/V8_8M3Y+J<S6086R#;TWP?509</^"`5:2>6%0(%/"!" <
MLQUQ-R&S&+,+@#]Z8V/V-'C[+=""HFIMX$:1`-!'4 ^@_Q@@(E,=<!V 'Y!F
MLA]P,6!_2M!_GFA0#W =X1QQ>1%IOXE3-9$(D" B&,,Q8'@;@N<T@$A#`P!C
M<W9$'+!AH?T8H$EC]E!!&A%=P'3C&F'_(7$=4P0`!O!OU@$`0?&+D?]=XEL&
M3#$B`':@/W5D4&K@_VR#=808(%72'>%AHP4@@?!M?YY7&;(O`'D/L!CP6?XG
M(/$J)7_X8_86\AF %N `0UPG9#A)445SESH^G2 \`, #$!UP.K^9/P-P9%"4
MB!ZP5R%A(@!^2Y/_8L\*@#.U-$071$/[+%"0<E #8#%@&L&142 @YYV%;J 9
M,D!CH/,L\:&#?S])%U,O9R<B(+)=P!DR=/L8,2$P8@3R'+ H$2,Q03+;DA$F
M\'<XH0= <Z+P==+]#Z!R'> _2#J 41 `@*:F_WCR(M ?< )@`'!'4!VPFI$_
M'6(7$(E!'B!!,C& -3?X,#=-/O U48'P`9 1,%HN!;!G%TH1\0"O, ,`$! `
M`````P`1$ `````#`( 0_____T `!S#@E[)*^T7 `4 `"##@E[)*^T7 `0L`
M`( (( 8``````, `````````!&``````.%`````````P`"@ @@!@``````P ``
M`````$8`````$(4````````#``6 "" &``````# ````````1@````!2A0``
MMPT```,`"8 (( 8``````, `````````!&``````&%`````````'@`B@ @@!@``
M````P `````````$8`````5(4```$````$`````."XP``L`)H (( 8``````, `
M``````!&``````Z%`````````P`G@ @@!@``````P `````````$8`````$84`
M```````#`"F "" &``````# ````````1@`````8A0```````!X`.( (( 8`
M`````, `````````!&`````#:%```!``````0`````````>`#F "" &``````#
M````````1@`````WA0```0````$`````````'@`Z@ @@!@``````P ``````
M`$8`````.(4```$````!`````````!X`/0`!````!0```%)%.B ``````P`-
'-/TW```^QH4`
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

16. [wxsig] Re: Wind direction bug found

From: William Beals <will@beals5.com>
Date: Fri, 3 Nov 2000 18:42:02 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117945-2000.11.03-19.58.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

I guess this is one of those few ligitimate cases where one mans bug is another mans feautre. I am just checking to see if the rain guage is present on power-up. If it isn't there, I should not be making it less functional at a remote site, should I? The only additional requirement I would be imposing is that if you re-install a rain guage that wasn't there on the last power-up, you will need to cycle power to recognize it. I think this is OK.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Wednesday, November 01, 2000 8:35 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Wind direction bug found

William Beals wrote:

> Folks:
>
> I found the wind direction bug. It was in the location I thought, but
> turned out to be a simpler bug than I thought. It was an overflow
problem,
> but it was with an array index, not the math associated with the indexed
> data.
>
> I wanted to take care of a few more little issues before releasing the
next
> code drop. The first is a request was to have seperate controls for baud
> rate versus operating mode. I am embarassed to say that I have forgotten
> what my note meant on the second item. I wrote down "no rain guage on
> power cycle" does anyone remember what that was in reference to?
>
> will
>
> (nice to be back working this again)
>
>

I can. I noticed on my unit when it was power-cycled that the rain gauge
would disappear.
This happened on two different boards both using ver 1.10.
I see another message that stated this may have been a "feature". I don't
think that would be
good to have on a remote station. A different way to manually remove a
rain gauge would
be better. Just my 2-cents.

Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

begin 600 WINMAIL.DAT
M>)\^(C !`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$``````````F%D`02 `0`I````4D4Z(%MW>'-I
M9UT@4F4Z(%=I;F0@9&ER96-T:6]N(&)U9R!F;W5N9 `9#@$%@ ,`#@```- '
M"P`#`!(`*@`"``4`* $!(( #``X```#0!PL``P`2`"4`'@`%`#\!`0F `0`A
M````-S8V,T,S03E!1$(Q1#0Q,4$X-38P,# P13@Y0C-#,#D`$P<!`Y &`%)
M```A````P`"``$````+`",```````,`)@``````"P`I```````#`"X`````
M``,`-@``````0 `Y`&#3XFT`1L !'@!P``$````I````4D4Z(%MW>'-I9UT@
M4F4Z(%=I;F0@9&ER96-T:6]N(&)U9R!F;W5N9 `````"`7$``0```!8````!
MP$8`;>*IPV-WL:T1U*A6``#HFSP)```>`!X,`0````4```!33510`````!X`
M'PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80S^1PI ,`!Q"P!0```@`(
M$ $```!E````1$]51SI)1U5%4U-42$E325-/3D5/1E1(3U-%1D573$E'251)
M34%414-!4T535TA%4D5/3D5-04Y30E5'25-!3D]42$5234%.4T9%05544D5)
M04U*55-40TA%0TM)3D=43U-%10`````"`0D0`0```"@&```D!@``?0D``$Q:
M1G7B>0&R/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0#N9P<G$R#^9]
M$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`00M@0&YG,3 S
M,PNF(')$"&!G.@JB"H0*@$E,(&<*4 01=&@$`""K&*$"(&48\&88<6\/H 0@
M9@?1;&EG:73)!W!A=!D@8V$/H 0@?'=H!) 9(1D1`X$$(&+W%Q 8P@!P;QB
M!) ;M!G0B&%U= EP+B @& # 86T@:G5S!4 /8,<%D!2Q'#!T;R /H!D@-P:0
M&'$9('(+<1@186?_'W$$(!$P!Y)\ 5 `B @T,1O=P20+75P'<(94#,:0!C!
M;B<%0!RR92R%'>%S&8!U;&0@')$O' `;HA[3(G%L&$)F=7QN8QI0`B '0!QP
M!4!A_1_P901@&I$`D!J0(U CE31)/QW05!_1`B!L>3D<<&1D&D$EPPEP<77N
M:29A(2(8``'<CLR1!!W"_(9 `D"2R&&(F$1^1>0A@_291+0N 'F '0"7Q'_HK
M4_YW&M BQR%2'\(+8!YA(99_(U KT@/P+)9 F 'Q)C?'EC)1 AA!\2"7 %
MH&<U`P!Z'W%T'<,8@6YK\1AW3TLN%THP4A=*"O3Y&A S-@% %: !0!$P)I%#
M)9 0=#$V("TW\D_W!1 :,"7231A!('$W\Q=&#S<$-M$+$S<&:2TQ-,8T`4 :
M$#$X, % #-!Q.Y-B($8#81<P#))B`1;4(%M33510.M)D'!!H<@.!0" `*)#(
M:W,N&1!T71=%/, W!F ",#TG5PF &1!S9,1A>2-03F]V)G D0#D%P# Q(U !
MT#P@(#A .C,U(%!-/Z=40F\])U1!4%) \%C]!@!P!9 ',1W@`C ;01YACD<#
M8"'P/ZAU8FHW,9$])UMW> "09UT'\.QE.D#P%,$@*) R$26B_QP#`A E< LQ
M.;\ZR#94"[9_%U,*XPJ 2+ LD <P'B!"W1U@;!L!-P(7.SX\T ;P^S\P%S4^
M3T88`$GC'[,#\-](WAW"+<,8P"[%;QK 25/S,P(7`6AT(U <$#=03U7^= AP
M&1 CX A@(N$?,"1!_R9 `) JH"40!< <$BM15'GG4O@#D4'!<F8)``?@-O'[
M`F F<"Q/1E5!(F)34@/P/QB 65(*P" `*% 4P65X_R-0) (?PAIQ7 $$$%00
M!S#_&I CX%O3'\)<LPF 3T9!8'\!D#0E4(DMX$61,-,!D&O_&J(;4AE0)D 9
MT@1@&U$:$/\"0#%1! $8,20Q`A ;40EPWR40&M >XQ_1&1!X56<%H/\!`$CP
M`V B`B?B.V /D"*"_R8S*4!%TE-2'R$/<$'0'T'_11 @`!J2`B$#8$Y19*$<
M`/\=<%^7:<-9H60P&.%IHQ[B_P1B'<9!X0K 7?$PQ#D`*%#O*U,8`&DS9*%G
M'* :D N0]T]5&R F$6TH4!R1&Z$=8+\A-!_"#Z!J$2/@)N%M'</O3H-(\"&@
M`Z B') ?^@(@]T]&,80Q(R(=T'.P!Y$`</\KT!D1*7)!\W"S+993@@EPSQG0
M"7 E@"UQ;S]@?33X_5"'* ,`>4,D,FK@'L I\=YR'M08DB!P"W$I8'P73/T:
MP&X=PQR1>^%600.@<0'_)7 B<1L2`Z!;92&4,2-1<G]WXQ_F'7 @@2H$*) Y
M`'#_11 *P#0E)^ 8H0]PA/%6([\NP2H`2/$!('D")"%O"Q$?&_$<H8$0*M-9
MH2 Q+O\6(#0E(W$?81R'..0K1"QA_V&S&)(`P"A0:3,D0(&A)D#^(AU15?%V
M,!W#<[BQ#-$_RVR*A471&_0!'!H]R%A)DCWBW$EL1W!08;Y+>!NP1\P_P.!
M(& LD"A0)F)I42S&A C?%T1\4@^P1:$=P4H>4G$!/C*"D"$A/T 72CVS2S"X
M1%-0-3X7ACEG62OAO6*"8PAPAU(H060P8@3RWR1 ,--(`UWA2)!W0?%.0;Y
M!: JH!Y0!)!!T"Z>(?^%51\P)7"<)Q]!2-$F0)@_P!P,V F< MP`R ?(641
M0= &+4@#.X U-S W3;Y &A >8#] `9 1,"YOL0L72A'Q`*3 `P`0$ `````#
M`!$0``````,`@!#_____0 `',.#0O,O_1< !0 `(,.#0O,O_1< !"P``@ @@
M!@``````P ```````$8``````X4````````#``* "" &`````# ````````

```
M1@`````0A0`````````,`!8 (( 8``````, ```````!&`````%*%``"W#0``
M`P`)@ @@!@``````P ```````$8``````84````````>`"* "" &``````#
M`````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````P ``````
M`$8`````#H4````````#`"> "" &``````# ````````1@``````1A0``````
M``,`*8 (( 8``````, ```````!&`````!B%`````````'@`X@ @@!@``````
MP ```````$8`````-H4```$````!`````````!X`.8 (( 8``````, ``````
M``!&`````#>%```!`````0`````````>`#J "" &``````# ````````1@``
M```XA0```0```$`````````'@`]``$````%````4D4Z( `````#``TT_3<`
#`,A_
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

17. [wxsig] Re: Wind direction bug found

From: Doug <dbuhrman@radiks.net>
Date: Fri, 03 Nov 2000 20:29:49 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-117947-2000.11.03-20.39.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As long as I know that is the way it works, that is fine with me. I have battery backup at my remote site, but I always have the worst luck in something going wrong. Thanks for all the work you've done on the code.

Doug K0DSP

William Beals wrote:

> Doug:
>
> I guess this is one of those few ligitimate cases where one mans bug is
> another mans feautre. I am just checking to see if the rain guage is
> present on power-up. If it isn't there, I should not be making it less
> functional at a remote site, should I? The only additional requirement I
> would be imposing is that if you re-install a rain guage that wasn't there
> on the last power-up, you will need to cycle power to recognize it. I
> think this is OK.
>
> will
>
> -----Original Message-----
> From: Doug [SMTP:dbuhrman@radiks.net]
> Sent: Wednesday, November 01, 2000 8:35 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: Wind direction bug found
>
> William Beals wrote:
>
> > Folks:
> >
> > I found the wind direction bug. It was in the location I thought, but
> > turned out to be a simpler bug than I thought. It was an overflow
> problem,
> > but it was with an array index, not the math associated with the indexed
> > data.
> >
> > I wanted to take care of a few more little issues before releasing the
> next
> > code drop. The first is a request was to have seperate controls for baud
> > rate versus operating mode. I am embarassed to say that I have forgotten
> > what my note meant on the second item. I wrote down "no rain guage on
> > power cycle" does anyone remember what that was in reference to?
> >
> > will
> >
> > (nice to be back working this again)
> >
> >
>
> I can. I noticed on my unit when it was power-cycled that the rain gauge
> would disappear.
> This happened on two different boards both using ver 1.10.
> I see another message that stated this may have been a "feature". I don't
> think that would be
> good to have on a remote station. A different way to manually remove a

> rain gauge would
> be better. Just my 2-cents.
>
> Doug K0DSP
>
> -

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] RE: Dead wx

From: "Ehler, Kyle" <kehler@lsil.com>
Date: Mon, 6 Nov 2000 16:21:35 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118464-2000.11.06-16.38.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes, I confirmed that the problem is not in the cabling. I'm not *that*
senior momenting just yet. . .
In looking at the pcb, I see a SOT-23 near the RJ-11 connectors -marked with
an "L44". Is this a transistor?
As warren suggested, the DS9502 is the (six terminal SMD) device to suspect,
but checking continuity across the device does not indicate a dead short. I
measure roughly 36Kohm from gnd to buss.
Open circuit I see 5V coming out of the laptop port adapter, when connected
I do not see more than 0.3Vdc present on the bus.

Kyle

19. [wxsig] APRS WX information

From: "Antonio Sergio Sena" <aserginho@hotmail.com>
Date: Tue, 07 Nov 2000 10:34:34 WET
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118542-2000.11.07-04.44.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello people !!

I've done some research in the inet to find some info about WX aplied to
APRS, or the opposite.
What i want to know is: how can i get info about the WX networks, emergency
WX net, and all of this important WX info, aplied directly to the APRS, and
what can APRS contribute for this.

Anyone has a hint??

Thanks to all

73 de CT2GPW

****
Antonio Sergio Sena
BEng Electrical & Electronic Engeneering
Heriot-Watt University - Edinburgh
www.qsl.net/ct2gpw

_____
Get Your Private, Free E-mail from MSN Hotmail at http://www.hotmail.com.

Share information about yourself, create your own public profile at
http://profiles.msn.com.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

20. [wxsig] RE: Dead wx

From: wb4mdc@arrl.net
Date: Tue, 07 Nov 2000 08:36:52 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: wb4mdc@arrl.net
Message-ID: <LYR15067-118547-2000.11.07-07.46.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello.

(I joined this discussion late.)

>
> Open circuit I see 5V coming out of the laptop port adapter, when connected
> I do not see more than 0.3Vdc present on the bus.
>
> Kyle
>

Are the wires swapped? When testing my Dallas Semi WX station, I found I
couldn't use just any old "telephone" cable to connect the computer and
station. Many of the pre-made "silver satin" cables have the the R/G pair
reversed from end to end; sort of a "null-fone" cable if you will and these
don't work.

Jack Warren
WB4MDC
FN42fv

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] One Wire Weather Station on Ebay

From: Paul Schleider <p-schleider@tamu.edu>
Date: Tue, 07 Nov 2000 10:51:15 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118567-2000.11.07-11.28.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just saw another station on Ebay so I thought I'd let the group know.
it as listed as:

One Wire Weather Station
Item #485889466

Good Luck
Paul Schleider
e-mail: p-schleider@tamu.edu

22. [wxsig] Re: One Wire Weather Station on Ebay

From: Alan Heaberlin <w6amh@yahoo.com>
Date: Tue, 7 Nov 2000 11:32:10 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118589-2000.11.07-13.42.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here is another 1 Wire WX station on eBay:
Item #490750480
In my opinion both have been bid up excessively high
as usually is the case on eBay in my experience.
If I'm not mistaken the retail value of this device is
about $80.00. I can see paying $100 for a brand new
item since they are not available from the
manufacturer any more, but much more than that doesn't
make much sense to me.
Alan Heaberlin
--- Paul Schleider <p-schleider@tamu.edu> wrote:
> I just saw another station on Ebay so I thought I'd
> let the group know.
> it as listed as:
>
> One Wire Weather Station
> Item #485889466
>
> Good Luck
> Paul Schleider
> e-mail: p-schleider@tamu.edu

_____
Do You Yahoo!?
Thousands of Stores. Millions of Products. All in one Place.
http://shopping.yahoo.com/

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Re: One Wire Weather Station on Ebay

From: Paul Schleider <p-schleider@tamu.edu>
Date: Tue, 07 Nov 2000 13:43:29 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118590-2000.11.07-13.53.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I agree with you on the high cost. When I put up the notice it was only
$102.50. I guess some people want one pretty bad. Maybe the firm in
Mexico will get theirs on-line pretty soon.

Paul

At 11:32 AM 11/7/00 -0800, you wrote:
>Here is another 1 Wire WX station on eBay:
>Item #490750480
>In my opinion both have been bid up excessively high
>as usually is the case on eBay in my experience.
>If I'm not mistaken the retail value of this device is
>about $80.00. I can see paying $100 for a brand new
>item since they are not available from the
>manufacturer any more, but much more than that doesn't
>make much sense to me.
>Alan Heaberlin
>--- Paul Schleider <p-schleider@tamu.edu> wrote:
> > I just saw another station on Ebay so I thought I'd
> > let the group know.
> > it as listed as:
> >
> > One Wire Weather Station
> > Item #485889466
> >

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] Re: One Wire Weather Station on Ebay

From: GS <gsanders1@bigfoot.com>
Date: Tue, 07 Nov 2000 20:09:14 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118622-2000.11.07-19.22.28--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Alan Heaberlin wrote:
>
> Here is another 1 Wire WX station on eBay:
> Item #490750480
> In my opinion both have been bid up excessively high
> as usually is the case on eBay in my experience.
> If I'm not mistaken the retail value of this device is
> about $80.00.

The ad copy indicates that the rain gauge is included. I don't
recall what the rain gauge originally cost, but that could affect
it's value to someone.

EBay isn't exactly a buyer-friendly system! I remember selling a
repeater (without a reserve) on eBay that I bought at a hamfest
for 25 bucks. It went for over 400.....

Gary Sanders

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] Re: One Wire Weather Station on Ebay

From: "Rick Austin" <rickaustin@attglobal.net>
Date: Tue, 7 Nov 2000 19:59:43 -0600

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118625-2000.11.07-20.10.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> EBay isn't exactly a buyer-friendly system! I remember selling a
> repeater (without a reserve) on eBay that I bought at a hamfest
> for 25 bucks. It went for over 400.....
>

This discussion is getting a little off-topic but I can't resist responding to the forgoing remark. (Disclosure: I am selling the second of three Weather Stations on Ebay at this time.) The subject repeater was worth $25 when you bought it and $400 when you sold it. No one forced the seller who paid $400 to ante up that much cash. To him, it was worth $400 and so that's what he paid for it. The law of supply and demand at work in a free market.

Ebay is one of the best free marketplaces that has ever existed. I recently sold an item that I won as a door prize. It cost $45 new but I didn't pay anything for it. I could have sold it at a garage sale to a disinterested buyer for maybe five bucks. On Ebay, seven different people, who apparently wanted what I had, bid on the item and it sold for $33.

Hams as a group are frugal and resourceful. The best deals may be at a hamfest because of the limited pool of buyers. The problem is that you may not be able to find what you are looking for.

Ebay may be the best place in the world for a buyer and a seller to find each other. As a seller, you will find a pool of potential customers on Ebay for almost anything you have to sell. As a buyer, you will probably find what you are looking for on Ebay but you will probably have to pay a competitive price for it. The law of supply and demand at work in a nationwide free market. Nobody ever pays more for something that what they think it is worth. Caveat Emptor!

Rick Austin in Austin
KD5LAQ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

26. [wxsig] RE: APRS WX information

From: William Beals <will@beals5.com>
Date: Tue, 7 Nov 2000 19:01:24 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118626-2000.11.07-20.39.11--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Antonio:

APRS is the network, so as long as you can get into and out of the network, you should be all set.

To get data into the network, your data provider only needs to be able to transmit data on 144.39MHz using a TNC.

The "network" can be point to point, through digipeaters, or through the internet, depending on your needs and what connections are available to you. The internet connectivity is neat as you can get data from wherever in the world someone has a radio with an internet connection and can relay the data.

TAPR has an email reflector for APRS in general called aprsig for general APRS stuff and there is a good spec for the APRS protocol itself in TAPRs FTP area.

Not much of an introduction, but hopefully a starter on where to get information. If you have more questions, feel free to post them here.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com

15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

27. [wxsig] Re: One Wire Weather Station on Ebay

From: Alan Heaberlin <w6amh@yahoo.com>
Date: Tue, 7 Nov 2000 18:50:24 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118627-2000.11.07-21.01.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have gotten a few fair deals on eBay. I got a Yeasu
2400 for $75 which I consider a bargain.
On the other hand I have an acquaintance who makes a
business out of selling ham gear on eBay and he
regularly solicits his friends to pump up the price!
Now if his sister was in a wheel chair...etc., etc,.
that would be one thing.
We need to be cognizant of the real world value of
things and not succumb to the zeal that I see some
people attribute to the value of eBay. A rip-off is a
rip-off!
Alan Heaberlin
--- Rick Austin <rickaustin@attglobal.net> wrote:
> > EBay isn't exactly a buyer-friendly system! I
> remember selling a
> > repeater (without a reserve) on eBay that I bought
> at a hamfest
> > for 25 bucks. It went for over 400.....
> >
>
> This discussion is getting a little off-topic but I
> can't resist responding
> to the forgoing remark. (Disclosure: I am selling
> the second of three
> Weather Stations on Ebay at this time.) The subject
> repeater was worth $25
> when you bought it and $400 when you sold it. No one
> forced the seller who
> paid $400 to ante up that much cash. To him, it was
> worth $400 and so that's
> what he paid for it. The law of supply and demand at
> work in a free market.
>
> Ebay is one of the best free marketplaces that has
> ever existed. I recently
> sold an item that I won as a door prize. It cost $45
> new but I didn't pay
> anything for it. I could have sold it at a garage
> sale to a disinterested
> buyer for maybe five bucks. On Ebay, seven different
> people, who apparently
> wanted what I had, bid on the item and it sold for
> $33.
>
> Hams as a group are frugal and resourceful. The best
> deals may be at a
> hamfest because of the limited pool of buyers. The
> problem is that you may
> not be able to find what you are looking for.
>
> Ebay may be the best place in the world for a buyer
> and a seller to find
> each other. As a seller, you will find a pool of
> potential customers on Ebay
> for almost anything you have to sell. As a buyer,
> you will probably find
> what you are looking for on Ebay but you will
> probably have to pay a
> competitive price for it. The law of supply and
> demand at work in a
> nationwide free market. Nobody ever pays more for
> something that what they

> think it is worth. Caveat Emptor!
>
> Rick Austin in Austin
> KD5LAQ
>
>
>
>
> ---
> You are currently subscribed to wxsig as:
> w6amh@yahoo.com
> To unsubscribe send a blank email to
> leave-wxsig-15067P@lists.tapr.org
>

_____
Do You Yahoo!?
Thousands of Stores. Millions of Products. All in one Place.
http://shopping.yahoo.com/

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

28. [wxsig] Re: One Wire Weather Station on Ebay

From: "Rick Austin" <rickaustin@attglobal.net>
Date: Tue, 7 Nov 2000 21:57:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118632-2000.11.07-22.08.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> On the other hand I have an acquaintance who makes a
> business out of selling ham gear on eBay and he
> regularly solicits his friends to pump up the price!

Such behaviour is unethical and probably illegal. I suggest you consider
letting Ebay know what he is up to.

Rick Austin in Austin
KD5LAQ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] RE: APRS WX information

From: "Antonio Sergio Sena" <aserginho@hotmail.com>
Date: Wed, 08 Nov 2000 12:05:30 WET
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118677-2000.11.08-06.16.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>APRS is the network, so as long as you can get into and out of the network,
>you should be all set.
>
>To get data into the network, your data provider only needs to be able to
>transmit data on 144.39MHz using a TNC.
>
>The "network" can be point to point, through digipeaters, or through the
>internet, depending on your needs and what connections are available to
>you. The internet connectivity is neat as you can get data from wherever
>in the world someone has a radio with an internet connection and can relay
>the data.
>
>TAPR has an email reflector for APRS in general called aprsig for general
>APRS stuff and there is a good spec for the APRS protocol itself in TAPRs
>FTP area.
>
>Not much of an introduction, but hopefully a starter on where to get
>information. If you have more questions, feel free to post them here.
>
>will
>

Hello Will,

Thanks for the explanation, but i already have a network running here, with
several digi's working.
What i want to know, is how the chatastrofe, disaster, meteorological
events, or how do you call it.... works in conjuntion with APRS.
I know that there are some USA National networks receiving data from the
APRS Ham network for complement info.
What can WX prevention, forecasting, gain with APRS ??
This is what i want to know.
I am leading this question oversea's to USA, because here in Europe,
everything is a little "slow"...

Thanks for everything !

73 de CT2GPW

****
Antonio Sergio Sena
BEng Electrical & Electronic Engeneering
Heriot-Watt University - Edinburgh
www.qsl.net/ct2gpw

_____
Get Your Private, Free E-mail from MSN Hotmail at http://www.hotmail.com.

Share information about yourself, create your own public profile at
http://profiles.msn.com.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] RE: APRS WX information

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Wed, 08 Nov 2000 06:33:37 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118682-2000.11.08-06.44.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Antonio Sergio Sena wrote:
>
> Thanks for the explanation, but i already have a network running here, with
> several digi's working.
> What i want to know, is how the chatastrofe, disaster, meteorological
> events, or how do you call it.... works in conjuntion with APRS.
> I know that there are some USA National networks receiving data from the
> APRS Ham network for complement info.
> What can WX prevention, forecasting, gain with APRS ??
> This is what i want to know.
> I am leading this question oversea's to USA, because here in Europe,
> everything is a little "slow"...

Forecasting cannot directly or currently benefit from APRS, expect in
those National Weather Service offices that use APRS as an adjunct to
spotting of severe weather events, most often with their own local
spotters. We often refer to this as "Now-cast". Prevention benefits
from seeing an event displayed and allowing the users "downstream" of
the event to prepare for it. I often use it here to see weather trends,
and tell my kids how to dress for the day... our TV station weather
people are pretty bad, and I use now-casts to help with forecasts...

Here, we have a number of stations with weather hardware associated with
them. These stations can thus input their weather observations into the
network stream. The APRS servers acknowledge them like everything else,
and make those data available to the net. If your internet access point
(I-Gate) sees the data and downloadss it to your local network, you will
see it too.

Dale Hugeley works at the NWS here. He has a system that ports severe
weather messages to the APRS server stream. Most of what we get are
county alerts that will light up a county outline with the appropriate
color for the severity of the alert, but I have also seen weather icons
for severe thunderstorm and tornado associated with his system. I have
appreciated those when they were in my area, as I monitor APRS, radas
and the local nets as much as possible in the time of bad weather.

Hope this is helpful. Let me know if I can answer other questions for
you?

73, gerry
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

31. [wxsig] RE: APRS WX information

From: "Antonio Sergio Sena" <aserginho@hotmail.com>
Date: Wed, 08 Nov 2000 14:53:15 WET
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118692-2000.11.08-09.05.54--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Dale Hugeley works at the NWS here. He has a system that ports severe
>weather messages to the APRS server stream. Most of what we get are
>county alerts that will light up a county outline with the appropriate
>color for the severity of the alert, but I have also seen weather icons
>for severe thunderstorm and tornado associated with his system. I have
>appreciated those when they were in my area, as I monitor APRS, radas
>and the local nets as much as possible in the time of bad weather.

Hello Gerry,

Thanks for the info.
Do you mean that the icons are automatically changed when there is trouble
?? this a feature of the gates, the software you use, or the WX APRS
stations spreaded ??

This is quite interesting. This is the info i was looking for.
More will be tremendously appreciated !!
Thanks!

73 de Sena, CT2GPW

****
Antonio Sergio Sena
BEng Electrical & Electronic Engineering
Heriot-Watt University - Edinburgh
www.qsl.net/ct2gpw

_____
Get Your Private, Free E-mail from MSN Hotmail at http://www.hotmail.com.

Share information about yourself, create your own public profile at
http://profiles.msn.com.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] Where do I get the sensor kit?

From: John Wood <john@otherlife.net>
Date: Wed, 08 Nov 2000 09:56:34 -0800
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118722-2000.11.08-12.06.44--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello group:
    I have just ordered the TAPR T-238 kit and have been promised
delivery
in January. Then I went to the iButton site to order the wind gage,
etc. only
to be unable to find it. Can anyone tell me how to order it?

Thanks,

--
John Wood, KF6HFA, 510.234.0527, john@otherlife.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

33. [wxsig] RE: Where do I get the sensor kit?

From: William Beals <will@beals5.com>
Date: Wed, 8 Nov 2000 20:19:32 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118790-2000.11.08-21.34.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

Dallas recently quit selling the weather sensor. The TAPR page announces
this in the big yellow box. Before you panic too much, another company has
announced that they will be making the weather station, but have not
announced the date yet, there are a bunch of us eagerly awaiting the
announcment of the date.

If this is a BIG problem (and I could see how it could be), I think you
could call back and explain your situation. The boards are temporarily
backlogged (hence your January delivery).

will

-----Original Message-----
From: John Wood [SMTP:john@otherlife.net]
Sent: Wednesday, November 08, 2000 10:57 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Where do I get the sensor kit?

Hello group:
    I have just ordered the TAPR T-238 kit and have been promised
delivery
in January. Then I went to the iButton site to order the wind gage,
etc. only
to be unable to find it. Can anyone tell me how to order it?

Thanks,

--
John Wood, KF6HFA, 510.234.0527, john@otherlife.net

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(AT#`0:0" `$``````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
M`````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`K````4D4Z(%MW>'-I
M9UT@5VAE<F4@9&\@22!G970@=&AE('-E;G-O<B!K:70_`'0.`06 `P`.````
MT <+``@`% `3`" ``P`T`0$@@ ,`#@```- '"P`(`!0`$ `0``,`(0$!"8 !
M`"$````Y.#$U-30Y,4(R0C5$-#$Q03@U-C P,#!%.#E",T,P.0#J!@$#D 8`
MB <``"$````+``(``0````L`(P```````P`F```````+`"D```````,`+@``
M`````P`V``````! `#D`H)T&X?M)P $>`' ``0```"L```!213H@6W=X<VEG
M72!7:&5R92!D;R!)(&=E="!T:&4@<V5N<V]R(&MI=#\```(!<0`!````%@``
M``' 2?O@_9%4%9FULA'4J%8``.B;/ D``!X`'@P!````!0```%--5% `````
```

```
M'@`?# $````0````=VEL;$!B96%L<S4N8V]M``,`!A X*B0H`P``$)P#```>
M``@0`0```&4```!*3TA..D1!3$Q!4U)%0T5.5$Q9455)5%-%3$Q)3D=42$57
M14%42$524T5.4T]25$A%5$%04E!!1T5!3DY/54Y#15-42$E324Y42$5"24=9
M14Q,3U="3UA"149/4D593U5004Y)``````(!"1 !````8 0``%P$``!@!@``
M3%I&=5OOPKT_``H!`P'W`J0#XP(`8VC!"L!S970P( <3`H-#`% .YG!R<3(/
MYGT3"H (R" ["6\R-35+`H *@78(D'=K"X!DVC0,8&,`4 L#8P!!"V! ;F<Q
M,#,S"Z8@X$IO:&XZ"J(*A J 7D0'0 M@!" )<&,)\'3 ;'D@<75I!4 /H ,8
M( N 9R!T:&4@^'=E81G1!< /H " !; 0+B @5!GA5$%0M%(@"K!G&? `<&X(
M8-YN&) $(!G0! `@"X 9P]1B:1FP>1EA;P?@!N"Z>!KQ0@$0!; 9\'D(8 L;
MH0,`8QG ;V\@;6D5$&@L&_%O&D,%H&W?'R$8X ]P!" <!F09P1HP_QG"&. #
M\!@@'5 9\ # %+$S&;T!D'1I`B @`&)U>P5 #W!V&? @,2%;&?!D_QHP'L$/
ML" `&D(;X2=B)-&!'%!H(&]F('4$(,L:(!O0<AC187<+<"2 OQFE' 4'@ (P
M*$(F5BX72IY)*M(<PB%!'F!)1QN@PP-@`F!E;2 H`' AX'))()%U;"'@#Z 9
M\&CO'>$9(2Y$(O I( `N(!RA[&YK'M,N1&,8$1U0`-#S,& MXF5X"U,>TAIQ
M&2#^=21S&O4&X L1(4$>L2:P?R# !; *P ,0&. Q<@D`9[L;T"'@*!G@'%$R
M=$H`<'TS``'(8X $`&8 E0#<`*9\K>R*B%TH*]!F ,S8!0$\5H % +5$FL&-T
M$'0QJ#8@+3N23P409PN ]P= != 'D',;P3N3%T8ZI <Z<0L3.J9I+3$T-.,!
M0!F ,3@P`4 ,T#\SN&(@1@-A%S ,DF(6U P@5Q^0(>!;4TU4:% Z:A<!0"!#
M&8!F]2M@;@^P71=%0& &8 (PK4#'5PF 0T!S)I!Y( "<3F\E0 ;0&F$P." `
MBP'0/\ @%B Z-3</X#)-0X=4;T#'&V-76/T&`' %D <Q+A ","=1)% D($<#
M8'5P0XAU8D9J.M% QUMW> "09_9=09 G0V0?H"X@&] B,^4:A2 4L'0_/3\^
M2CGT[PNV%U,*XPJ 2!VR30!*$M\7-1L`&P`N("4C:BB *J$/"R G428T&V-4
M+3(S?CA-\C&S)2,B\ GP+4)M_P0`"8 71#<V%T0<\3:U&O0_`Z N(!H0*I$?
M@!G#:4+_)/ ?@ .@,M$T81^@4],9Q+<4P4T`&\$L%T0/L&,:\/\"(!C0%T19
ML2+Q'$ !H"V0WUFB/P`M\1D@&O%#`Y$@X?\"(#1B(L$'@"[36O=.&1=B\QL@
M``!K<UQ5%T0]%D%7@2 `2T8V2$9!( `*-18@+E4`-"XP-?PR-R `0E\Z\#CM
M8O@])799'O$GDF,(< EP&+-S?TKP!/(B\"'A'Z!+\QOP<\XZ&@!%T0= <T @
MHBB ^P20)4 N(*%AY1^@'$!J5_\:@B'@)]$5X3!@+: +< ,@=UFQ+9 E,2U+
M\S\@1N PF#=-0!F )%!S+@&0M1$P+@6P9Q=*$?$`<O #`! 0``````,`$1 `
M`````P" $/____] ``<P('7\:_M)P % ``@P('7\:_M)P $+``" "" &````
M``# ````````1@`````#A0``````````,``H (( 8``````, ```````!&````
M`!"%`````````P`%@ @@!@`````P ```````$8`````4H4``+<-```#``F
M"" &``````# ````````1@`````!A0```````!X`(H (( 8``````, ``````
M``!&`````%2%```!````! ```#@N, `+`": "" &``````# ````````1@``
M```.A0````````,`)X (( 8``````, ```````!&`````!&%`````````P`I
M@ @@!@``````P ```````$8`````&(4````````>`#B "" &``````# ````
M````1@`````VA0```0````$`````````'@`Y@ @@!@``````P ```````$8`
M````-X4```$````!`````````!X`.H (( 8``````, ````````!&`````#B%
L```!`````0`````````>`#T``0````4```!213H@``````,`#33]-P``%^6%
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

34. [wxsig] RE: APRS WX information

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 09 Nov 2000 09:15:48 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118858-2000.11.09-09.26.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Antonio Sergio Sena wrote:
>
> >Dale Hugeley works at the NWS here. He has a system that ports severe
> >weather messages to the APRS server stream. Most of what we get are
> >county alerts that will light up a county outline with the appropriate
> >color for the severity of the alert, but I have also seen weather icons
> >for severe thunderstorm and tornado associated with his system. I have
> >appreciated those when they were in my area, as I monitor APRS, radas
> >and the local nets as much as possible in the time of bad weather.
>
> Hello Gerry,
>
> Thanks for the info.
> Do you mean that the icons are automatically changed when there is trouble
> ?? this a feature of the gates, the software you use, or the WX APRS
> stations spreaded ??
>
> This is quite interesting. This is the info i was looking for.
> More will be tremendously appreciated !!
> Thanks!
Hi, Sena,

According to everything I know, the icons are generated by the
originating station, Dale's NWS application in this case, and sent to
the network via the servers. If there's a change, then the next time he

sends a report, the icon is changed appropriately in his sent string.
You repost it. For his storm icons, thunderstonrms, etc, he has
incorporated movement details (speed, course) so that you can
interpolate yourself. His hurricaine postings have also had prediction
storm icons with an appropriate ID tag you can read for projected
position based on currently posted position.

73, gerry n5jxs
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

35. [wxsig] RE: Where do I get the sensor kit?

From: John Wood <john@otherlife.net>
Date: Thu, 09 Nov 2000 10:46:48 -0800
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118878-2000.11.09-12.56.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks Will:
    I thought that something like that was going to happen. I will just
wait a while.

Thanks again.

John, KF6HFA

William Beals wrote:

> John:
>
> Dallas recently quit selling the weather sensor. The TAPR page announces
> this in the big yellow box. Before you panic too much, another company has
> announced that they will be making the weather station, but have not
> announced the date yet, there are a bunch of us eagerly awaiting the
> announcment of the date.
>
> If this is a BIG problem (and I could see how it could be), I think you
> could call back and explain your situation. The boards are temporarily
> backlogged (hence your January delivery).
>
> will
>
> -----Original Message-----
> From: John Wood [SMTP:john@otherlife.net]
> Sent: Wednesday, November 08, 2000 10:57 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Where do I get the sensor kit?
>
> Hello group:
>   I have just ordered the TAPR T-238 kit and have been promised
> delivery
> in January. Then I went to the iButton site to order the wind gage,
> etc. only
> to be unable to find it. Can anyone tell me how to order it?
>
> Thanks,
>
> --
> John Wood, KF6HFA, 510.234.0527, john@otherlife.net
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>   Name: WINMAIL.DAT
>   WINMAIL.DAT   Type: unspecified type (application/octet-stream)
>   Encoding: x-uuencode
>
> ---
> You are currently subscribed to wxsig as: john@otherlife.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

--
John Wood, KF6HFA, 510.234.0527, john@otherlife.net

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

36. [wxsig] Dallas Weather Sensor w/rain gauge for sale ...

From: "Brian B. Riley" <brianbr@macconnect.com>
Date: Thu, 9 Nov 2000 16:21:27 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118891-2000.11.09-15.31.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just came into possession of a third weather station and had plans for
it. Between various commitments I have made, its just not feasible for
me to make use of it in the next two-three months. This is the basic
weather sensor (temp, wind speed, wind direction) and the rain gauge
kits. The boxes have been opened and all parts were inventoried and
present, but nothing further was done, no assembly begun. I will sell
them for approximately the original costs - $140 for the basic set and
the rain gauge and I pay postage will take the set.

I guess the safest way to do it is that I will take offers through 6-7pm
Friday and draw a name from the hat as the last one was done. Please
email off the list. I will announce the lucky purchaser via the list and
individual email tomorrow evening.

72 de brian, n1bq

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418   NJQRP #274
QRP-L #2276   Zombie #768

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] RE: APRS WX information

From: "Antonio Sergio Sena" <aserginho@hotmail.com>
Date: Fri, 10 Nov 2000 14:51:29 WET
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-118986-2000.11.10-09.02.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>According to everything I know, the icons are generated by the
>originating station, Dale's NWS application in this case, and sent to
>the network via the servers. If there's a change, then the next time
So... Dale's application just reads the WX stations, and send the filtered
result to the network... !!
Good.

>storm icons with an appropriate ID tag you can read for projected
>position based on currently posted position.

Very usefull...
Although, in Portugal, where i am going to apply some work, we dont have
this kind of natural fenomenous, it is still good to know and to spread the
news of what is happening out there.

Thanks for the info !!

73 de CT2GPW, Sena

****

Antonio Sergio Sena
BEng Electrical & Electronic Engineering
Heriot-Watt University - Edinburgh
www.qsl.net/ct2gpw

_____
Get Your Private, Free E-mail from MSN Hotmail at http://www.hotmail.com.

Share information about yourself, create your own public profile at
http://profiles.msn.com.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] Re: Dallas Weather Sensor w/rain gauge for sale ...

From: "Bob" <rg_davis@email.msn.com>
Date: Fri, 10 Nov 2000 13:50:29 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119039-2000.11.10-15.19.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm Interested. Put me in the pool.

bob/kd7cm

----- Original Message -----
From: "Brian B. Riley" <brianbr@macconnect.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Thursday, November 09, 2000 2:21 PM
Subject: [wxsig] Dallas Weather Sensor w/rain gauge for sale ...

>
> I just came into possession of a third weather station and had plans for
> it. Between various commitments I have made, its just not feasible for
> me to make use of it in the next two-three months. This is the basic
> weather sensor (temp, wind speed, wind direction) and the rain gauge
> kits. The boxes have been opened and all parts were inventoried and
> present, but nothing further was done, no assembly begun. I will sell
> them for approximately the original costs - $140 for the basic set and
> the rain gauge and I pay postage will take the set.
>
> I guess the safest way to do it is that I will take offers through 6-7pm
> Friday and draw a name from the hat as the last one was done. Please
> email off the list. I will announce the lucky purchaser via the list and
> individual email tomorrow evening.
>
> 72 de brian, n1bq
>
> --
> N1BQ-3 @ 44 31.73N 072 51.55W
> WideN-N digi and weather station in Underhill Center, VT
> mailto:n1bq@wulfden.org
> AMSAT LM-1418   NJQRP #274
> QRP-L #2276   Zombie #768
>
>
>
> ---
> You are currently subscribed to wxsig as: rg_davis@email.msn.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] And the "hat" says ...

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 10 Nov 2000 23:13:01 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119078-2000.11.10-22.23.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The names went in the hat ... nine of them and the "hat" says;

 John Wood, KF6HFA, is the lucky recipient, and Alan Heaberlin, W6AMH,
is the first alternate. I will contact them offlist.

 Thanks to all who wrote.

72 de brian, n1bq

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418   NJQRP #274
QRP-L #2276   Zombie #768

-----Original Message-----
From: John Wood [mailto:john@otherlife.net]
Sent: Thursday, November 09, 2000 19:15 PM
To: Brian B. Riley
Subject: I want it

Hello Brian:
    Thanks for the offer. Please put my name in the hat.

John Wood

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] Re: Fw: [weather] Weather Station

From: John Vause <jdv@iglou.com>
Date: Sat, 11 Nov 2000 13:57:56 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119141-2000.11.11-13.08.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I came across this URL in the Dallas Semiconductor e-mail reflector:

        http://www.aag.com.mx/weather.html

Looks like AAG is shipping (or at least taking orders for) One Wire
WX stations.

Anyone tried to buy one from AAG yet?

Russ Chadwick wrote:
>
> This was posted to the Dallas Semiconductor e-mail reflector today. It is
> from a Mexican company that might be supplying 1-Wire weather stations in
> kit form in the very near future.
>
> Russ
> kb0tvj
>
> > -----Original Message-----
> > From: Aitor Arrieta [SMTP:aag@aag.com.mx]
> > Sent: Friday, October 27, 2000 12:24 PM
> > To: weather@dalsemi.com
> > Subject: [weather] Weather Station
> >
> > Hi to all.
> > As I told you in a previous e-mail ,we are working now to bring you
> > the 1-Wire aeometer based on the original design of Dallas
> > Semiconductor. It has not been an easy task, mainly due to
> > bureaucratic problems. Everything is almost done, we expect to start
> > accepting orders by the end of the next week, and we expect to start
> > shipping 10 November. I'll keep informed this SIG of the progress of
> > this project.
> > Thank you all for your patience
> > Aitor Arrieta G.
> > Automatizacion Aplicada a Gasolineras S.A. de C.V.
> > Lat.20°35'11''N, Lng.100°24'12''W
>

> ---
> You are currently subscribed to wxsig as: jdv@iglou.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

--
* John Vause KF4ERV jdv@iglou.com   *
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] RE: Where do I get the sensor kit?

From: Paul Schleider <schleidr@tca.net>
Date: Sat, 11 Nov 2000 22:37:54 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119170-2000.11.11-22.48.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Look like AAG has their sensor online now.
Check out http://www.aag.com.mx/weather.html
Same price as Dallas only shipping from Mexico is a little high.

At 10:46 AM 11/9/2000 -0800, you wrote:
>Thanks Will:
>   I thought that something like that was going to happen. I will just
>wait a while.
>
>Thanks again.
>
>John, KF6HFA
>
>William Beals wrote:
>
> > John:
> >
> > Dallas recently quit selling the weather sensor. The TAPR page announces
> > this in the big yellow box. Before you panic too much, another company has
> > announced that they will be making the weather station, but have not
> > announced the date yet, there are a bunch of us eagerly awaiting the
> > announcment of the date.
> >
> > If this is a BIG problem (and I could see how it could be), I think you
> > could call back and explain your situation. The boards are temporarily
> > backlogged (hence your January delivery).
> >
> > will
> >
> > -----Original Message-----
> > From: John Wood [SMTP:john@otherlife.net]
> > Sent: Wednesday, November 08, 2000 10:57 AM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Where do I get the sensor kit?
> >
> > Hello group:
> >   I have just ordered the TAPR T-238 kit and have been promised
> > delivery
> > in January. Then I went to the iButton site to order the wind gage,
> > etc. only
> > to be unable to find it. Can anyone tell me how to order it?
> >
> > Thanks,
> >
> > --
> > John Wood, KF6HFA, 510.234.0527, john@otherlife.net
> >
> > ---
> > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >   Name: WINMAIL.DAT
> >   WINMAIL.DAT   Type: unspecified type (application/octet-stream)
> >   Encoding: x-uuencode
> >
> > ---
> > You are currently subscribed to wxsig as: john@otherlife.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

>--
>John Wood, KF6HFA, 510.234.0527, john@otherlife.net
>
>
>
>---
>You are currently subscribed to wxsig as: schleidr@tca.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Paul Schleider
Schleider Enterprises
4417 Kingsdale Dr.
Bryan, TX 77802
Ph: 979-731-8159
Fx: 979-260-9386

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] 1.10.2 Release

From: William Beals <will@beals5.com>
Date: Sun, 12 Nov 2000 21:44:28 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119365-2000.11.12-22.56.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

1.10.2 is up on the website. Changes since 1.10.0 (last release) are:
1) Fixed Peet mode bug where APRS data got inserted every 60th sample.
2) Cleaned up (lack of) rain guage support when rain guage removed
3) CR-LF added in TNC-LTP mode.
4) If error during wind direction cal, you no longer have to re-enter
temperature IDs.
5) Fixed bug where noisy data around north wasn't handled gracefully.
6) User-settable baud rates now supported.

The operations manual has been updated to reflect item 6. I messed up the
formatting though. I'll likey need Steves help to get this fixed.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] RE: 1.10.2 Release

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 13 Nov 2000 16:17:23 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119545-2000.11.13-15.29.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: William Beals
> Sent: Sunday, November 12, 2000 23:44 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] 1.10.2 Release
>
>
> Folks:
>
> 1.10.2 is up on the website.
  [snip]

Will, how about posting the website URL each time you make software announcements. In my case I keep forgetting to bookmark it ... (I will, this time!) but newbies probably do not know it in the first place.

72 de brian, n1bq

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418 NJQRP #274
QRP-L #2276 Zombie #768

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] "The" website

From: William Beals <will@beals5.com>
Date: Mon, 13 Nov 2000 18:44:05 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119598-2000.11.13-21.53.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Oops, Brain has a good point. The website is:

http://www.beals5.com/wx

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] Some more 1.10.2 notes

From: William Beals <will@beals5.com>
Date: Mon, 13 Nov 2000 20:00:05 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119600-2000.11.13-21.56.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I should tell you that there were a few things that were not tested fully on the 1.10.2 release due to time concerns. One unfortunate side-effect of the different baud rate settings is that my protocol qualification test bloomed from four tests to sixteen (four protocols time four baud rate settings per protocol). I did not have the time to test all the combinations. I humbly admit I did not have the patience to test all combinations. If you find something weird, please let me know.

Unfortunately I was not able to repeat the errors I generated Saturday night. Sunday night was just as cold but did not have the same problems.

On to the humidity sensor. Dallas says they'll be available to the general public Dec 15th.

will

This message sent using 100% recycled Electrons

(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] APRSWXNET Updated (finally)

From: "Russ Chadwick" <crb5@qwest.net>
Date: Mon, 13 Nov 2000 23:14:56 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119631-2000.11.14-00.25.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

APRSWXNET now has 11 stations (AP001 - AP011) that are regularly sending
amateur radio weather data through APRSSERVE in Miami to a computer in
Boulder, CO. There the data is compared with a real-time numerical weather
model for quality checking. Quality checks are made every hour and the
results posted to:

http://www-sdd.fsl.noaa.gov/MSAS/qcms.html

Look under "Current QC Summary Messages" for text output. The correct APRS
stations are AP001 to AP011 where the upper case are the updated stations
and any lower case are the old stations which have some incorrect locations.
Also look under "Real Time Graphics" for crude maps of the stations sending
weather data to the Quality Checking and Monitoring System (QCMS). Our
stations are marked ap001 to ap011 on the maps and upper case designations
will not show up on the maps.

I think that the APRSWXNET locations are correct, but if you should find an
error, let me know. Changes and additions should be easier to make in the
future. I promised a more extended write-up and I will provide that in the
near future.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

47. [wxsig] Re: APRSWXNET Updated (finally)

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Tue, 14 Nov 2000 05:13:13 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119652-2000.11.14-05.24.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ Chadwick wrote:
>
> APRSWXNET now has 11 stations (AP001 - AP011) that are regularly sending
> amateur radio weather data through APRSSERVE in Miami to a computer in
> Boulder, CO. There the data is compared with a real-time numerical weather
> model for quality checking. Quality checks are made every hour and the
> results posted to:
>
> http://www-sdd.fsl.noaa.gov/MSAS/qcms.html
>
> Look under "Current QC Summary Messages" for text output. The correct APRS
> stations are AP001 to AP011 where the upper case are the updated stations
> and any lower case are the old stations which have some incorrect locations.
> Also look under "Real Time Graphics" for crude maps of the stations sending
> weather data to the Quality Checking and Monitoring System (QCMS). Our
> stations are marked ap001 to ap011 on the maps and upper case designations
> will not show up on the maps.
>
> I think that the APRSWXNET locations are correct, but if you should find an
> error, let me know. Changes and additions should be easier to make in the
> future. I promised a more extended write-up and I will provide that in the
> near future.

Looks like I have a sensor problem! I'll try to change the
temp/dewpoint sensor and troubleshoot the baro discrepancy this weekend!

Thanks, Russ!
73, gerry n5jxs
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Fw: [weather] Humidity Sensor

From: "Russ Chadwick" <crb5@qwest.net>
Date: Tue, 14 Nov 2000 05:51:21 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119656-2000.11.14-07.02.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a message with attachment that gives some information on the
humidity sensor and on the barometer for the 1-Wire weather station. We
have a beta version of the humidity and Will is working with it now so that
the T-238 will be able to interface with it.

Russ
kb0tvj

> > -----Original Message-----
> > From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> >
> > Please see the attached document concerning the availability of the
> > humidity sensor which will be posted to the web site soon. Basically,
> > Dallas Semiconductor has decided to enhance the Humidity iButton by
> > adding a light sensor. The revised product introduction schedule has
> > been pushed out to April. Meanwhile a humidity module similar to that
> > discussed in the recent article in Sensors magazine will be available
> > Dec 15th at $20.
> >
> > The barometer is still stalled for delivery of sensing elements.
> >
> > Thanks for your interest in Dallas Semiconductor products.
> >
> > Dan Awtrey   Staff Engineer
> > Dallas Semiconductor   Phone: 972-371-6297
> > Building C   FAX: 972-371-3715
> > 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> > Dallas, TX 75244-3292
> > http://www.ibutton.com
> >
[Attachment: Announcing module.doc; application/msword; 24,576 bytes]

49. [wxsig] Re: Fw: [weather] Humidity Sensor

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 14 Nov 2000 08:25:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119670-2000.11.14-08.36.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Great, DS2438 support suggests that a BP sensor based on the same AD converter shouldn't be hard to add
to the T238. I still have the schematic and board layout for a DS2438 based BP sensor if you guys need
it.

Rich - Wn0x

>>> crb5@qwest.net 11/14/00 06:51AM >>>
This is a message with attachment that gives some information on the
humidity sensor and on the barometer for the 1-Wire weather station. We
have a beta version of the humidity and Will is working with it now so that
the T-238 will be able to interface with it.

Russ
kb0tvj

> > -----Original Message-----
> > From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> >
> > Please see the attached document concerning the availability of the
> > humidity sensor which will be posted to the web site soon. Basically,
> > Dallas Semiconductor has decided to enhance the Humidity iButton by
> > adding a light sensor. The revised product introduction schedule has
> > been pushed out to April. Meanwhile a humidity module similar to that
> > discussed in the recent article in Sensors magazine will be available
> > Dec 15th at $20.
> >
> > The barometer is still stalled for delivery of sensing elements.
> >
> > Thanks for your interest in Dallas Semiconductor products.
> >
> > Dan Awtrey   Staff Engineer
> > Dallas Semiconductor   Phone: 972-371-6297
> > Building C   FAX: 972-371-3715
> > 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> > Dallas, TX 75244-3292
> > http://www.ibutton.com
> >

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] Re: Fw: [weather] Humidity Sensor

From: William Beals <will@beals5.com>
Date: Tue, 14 Nov 2000 18:59:01 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119757-2000.11.14-20.50.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

It is good that they use the same chip from a pure driver standpoint. It
is a real pain in the neck when you see two of them on the bus to figure
out which is which. I have that fun now trying to distinguish between rain
sensors and wind speed sensors! I guess every silver lining needs a
cloud--oh well :-).

will

Great, DS2438 support suggests that a BP sensor based on the same AD
converter shouldn't be hard to add to the T238. I still have the schematic
and board layout for a DS2438 based BP sensor if you guys need it.

begin 600 WINMAIL.DAT
M>)\^(A,"`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+FJR9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`N````4D4Z(%MW>'-I
M9UT@4F4Z($9W.B!;=V5A=&AE<ET@2'5M:61I='D@4V5N<V]R`-(/`06 `P`.
M````T <+``X`$@`[``$``@! `0$@@ ,`#@```- '"P`.`!(`. `Y``(`=0$!
M"8 !`"$````Q-$4R,$5!1C5$0D%$-#$Q03@U-C P,#!%.#E",T,P.0`I!P$#
MD 8`< 4``"$````+``(``0````L`(P```````P`F```````+"D```````,`
M+#@```````P`V``````! `#D`X.W GZ=.P $>`' ``0```"X```!213H@6W=X
M<VEG72!293H@1G<Z(%MW96%T:&5R72!(=6UI9&ET>2!396YS;W(````"`7$`
M`0```!8````!P$ZGG\"O#N(5NET1U*A6``#HFSP)```>`!X,`0````4```!3
M3510`````!X``PP!````$ ````=I;&Q 8F5A;',U+F-O;0`#``80F,#U/P,`
M!Q"C`0``!@`($ $```!E````4DE#2#I)5$E31T]/1%1(05142$5955-%5$A%
M4T%-14-(25!&4D]-05!54D5$4DE615)35$%.1%!/24Y4251)4T%214%,4$%)
M3DE.5$A%3D5#2U=(14Y93U5314545T]/1E1(10`````"`0D0`0```$("```^
M`@``[ (``$Q:1G4/YFN2/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*)GT*
M@ C((#L);S(UEC4"@ J!=@B0=VL+@+1D- Q@8P!0"P-C`$&!"V!N9S$P,S,+
MIG4'\&D/8#H*H@J$"H!)(P5 ! `@9V\$<"!TAP]P!4 7(&5Y('4/H-$78B!S

```
M80> ( ]@!2#"( -2(&$@< AP%^!Z9 40=@20&# !D!- <,)O"X!T+B @%G09
M,'\)< = &4 +<1:0`Z 8`FZQ!9!K('<7@ .@>0A@!Q@P"> 7$'=O(&]F[Q=B
M&1 "(!?S8A? %Q =L/AF:6<98@A@!4 <P!5Q=Q:2'^,:LB /<!G0%Q1F$G4#
MH&YO!^!T<GE5"X!G'O)D! !T(F%UZP0`("!B#[!W">$;4!O"_P^@`( %L!LA
M$T <L!,Q&##N< G@)5$D="$@TA]0!Y!=!"!E&=$7H "0;!G2;%\+@")B'' )
M@!LB8PD`=;!D+2UO(" CP&P#(/ Z+2DN%;H#\"EP%;CS"S GP#,V`4 5Q!00
M*^$M`V!T!9 %0$<;870L@"!$4S(T,S@8,)QU<!I@`" M\6=G!Y#.=![A%S(9
M,$)0)%4>L)YA#Z 7`!Y5&$-!1!B +P(@&=$LT!GQ: A@;&1\;B<%0".0(0$+
M(![R8>9D,Q,8`E0R+= @PR+Q_REQ(148(0]@'B 70!5P)-/_!N R\@M@'1$A
MD06Q&3 ME=\P)"^(!I =`Q]0>00@*#)?%I :H!6Z%;0080`[L ```P`0$ ``
M```#`!$0`0````,`@!#_____0 `',$!5!U:G3L !0 `(,$!5!U:G3L !"P``
M@ @@!@``````P ``````$8``````X4````````#``* "" &``````# ````
M````1@``````0A0````````,`!8 (( 8``````, ```````!&`````%*%``"W
M#0```P`)@ @@!@``````P ```````$8``````84````````>`"* "" &````
M``# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``````P ``
M``````$8``````#H4````````#`"> "" &``````# ````````1@``````1A0``
M``````,`*8 (( 8``````, ```````!&`````!B%````````'@`X@ @@!@``
M````P ```````$8``````-H4```$````!`````````!X`.8 (( 8``````, `
M``````!&`````#>%```!`````0`````````>`#J "" &``````# ````````
M1@``````XA0```0````$`````````'@`]``$````%````4D4Z( `````#``TT
&_3<``*PC
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

51. [wxsig] Re: Fw: [weather] Humidity Sensor

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 15 Nov 2000 08:23:56 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119829-2000.11.15-08.35.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How could I modify the sensor to make it easier? Is there something I can put on the board that you can
 detect, thus verifying it as "wills" bp sensor?

>>> will@beals5.com 11/14/00 07:59PM >>>
Rich:

It is good that they use the same chip from a pure driver standpoint. It
is a real pain in the neck when you see two of them on the bus to figure
out which is which. I have that fun now trying to distinguish between rain
sensors and wind speed sensors! I guess every silver lining needs a
cloud--oh well :-).

will

Great, DS2438 support suggests that a BP sensor based on the same AD
converter shouldn't be hard to add to the T238. I still have the schematic
and board layout for a DS2438 based BP sensor if you guys need it.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] 1-Wire WX from Mexico

From: Alan Heaberlin <w6amh@yahoo.com>
Date: Wed, 15 Nov 2000 17:03:16 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119880-2000.11.15-18.48.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just received my 1-Wire WX sensor from AAG in
Mexico. It looks just like a stock Dallas unit with no
Made in Mexico legends or anything that would identify
it as other than a Dallas-made unit.
After running TMEX and identifying the port and
adaptor it still tells me it "cannot find the DS2407
on the MicroLan."
When I run the autodetect program on the TMEX it finds
a DS9097E but the serial port adaptor says (on it) it
is a DS9087U. Efforts to get it to recognize the "U"
device are unrewarded.
Running Creatlist I get the message that a 1-Wire Net

port does not exist.
I have double checked my computer ports and it
supposedly loads the DS9097E on either Com 1 or 2. I
have uninstalled and reloaded both programs and no joy
yet. Any ideas on what I might be doing wrong?

By the way, I ordered the unit from AAG on Monday late
afternoon and faxed their order page with a photocopy
of my check to them which I mailed on Tuesday. I had
the unit Wed. at 11:00am. That's what I call service!
Now if I can just get it to work...
Alan Heaberlin
W6AMH

_____
Do You Yahoo!?
Yahoo! Calendar - Get organized for the holidays!
http://calendar.yahoo.com/

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Mexican 1-Wire unit

From: William Beals <will@beals5.com>
Date: Wed, 15 Nov 2000 20:43:22 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119898-2000.11.15-22.49.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John and Alan:

Cool, looks like they respond really fast!

Alan: Alas I am not an expert on the TMEX software. Every adapter I've
had though has been for a DS9097U. Is the adapter itself marked so you
know what it is supposed to be? Are you using only the cables supplied
(assuming they supplied them all)? One of the fun things with the
telephone cables is that you can get cables with swapped pins which
effectively shorts th bus to ground and makes nothing work. A good test for
this would be to have only the DS9097?? plugged in and see if you can
reliably read it. If you can and plugging a cable in messes things up,
then that is likley your problem. It could also be a bad wx unit, but
hopefully not.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Re: Fw: [weather] Humidity Sensor

From: William Beals <will@beals5.com>
Date: Wed, 15 Nov 2000 20:45:29 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119899-2000.11.15-22.52.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

I am pretty much going to have to deal with the issue anyway when both
Dallas parts come out. I appreciate the offer though!

will

-----Original Message-----

From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Wednesday, November 15, 2000 7:24 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Fw: [weather] Humidity Sensor

How could I modify the sensor to make it easier? Is there something I can put on the board that you can detect, thus verifying it as "wills" bp sensor?

>>> will@beals5.com 11/14/00 07:59PM >>>
Rich:

It is good that they use the same chip from a pure driver standpoint. It is a real pain in the neck when you see two of them on the bus to figure out which is which. I have that fun now trying to distinguish between rain sensors and wind speed sensors! I guess every silver lining needs a cloud--oh well :-).

will

Great, DS2438 support suggests that a BP sensor based on the same AD converter shouldn't be hard to add to the T238. I still have the schematic and board layout for a DS2438 based BP sensor if you guys need it.

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org


```
begin 600 WINMAIL.DAT
M>)\^(BP$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?````
M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
M``,`_U\``````@'V#P$````$`````````F%D`02 `0`N````4D4Z(%MW>'-I
M9UT@4F4Z($9W.B!;=V5A=&AE<ET@2'5M:61I='D@4V5N<V]R`-(/`06 `P`.
M````T <+``\`% `M`!T``P!2`0$@@ ,`#@```- '"P`/`!0`+ `E``,`60$!
M"8 !`"$````R.# W0C8T13,U0D)$-#$Q03@U-C P,#!%.#E",T,P.0`#!P$#
MD 8`[ <``"$````+``(``0````L`(P```````P`F```````+`"D```````,`
M+@```````P`V``````! `#D`(-4:JG]/P $>`' ``0```"X```!213H@6W=X
M<VEG72!293H@1G<Z(%MW96%T:&5R72!(=6UI9&ET>2!396YS;W(````"`7$`
M`0```!8````!P$]_JAI.M@<INS41U*A6``#HFSP)```>`!X,`0````4```!3
M3510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O;0`#``80<9VC:0,`
M!Q#!`P``@`($ $```!E````4DE#2#I)04U04D545%E-54-(1T])3D=43TA!
M5D543T1%04Q7251(5$A%25-3545!3EE705E72$5.0D]42$1!3$Q!4U!!4E13
M0T]-14]55$E!4%!214-)051%5$A%3T9&15)42 `````"`0D0`0```+X$``"Z
M! ``O@8``$Q:1G6C2K>&/P`*`0,!]P*D`^,"`&-HP0K <V5T," '$P*#0P!0
M#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN 9-HT#&!C`% +`V,`
M00M@P&YG,3 S,PNF!_ Z:0]@.@JB"H0*@$D@&&%M(!$P#[!T>2!";140:"!G
M;PN 9Y @=&\@#W!V91EBZP$`!T @`_!T&/ :D!G0AP0!"E 8$&YY=V$8H-YW
M&M #H ;@&I%$!T +8+L$( JQ= 0@!: '@" (8%!T+B @& %P&%%C[0<P=!G1
M&M%O`2 $D!JQ\0A@9V@A%TH#\!R0%TKA"O1L:3,V`4 5H % %Q$P'# %D'00
M=#$V(&HM(Y)/!1!G"X :04WA!Y!S86=E(Y,71B*D!R)Q"Q,BIFDM,30TXP%
M(? Q.# !0 S0)S.X8B!&`V$7, R28A;4%"!"!9!K&G-;4TT(5% Z%O) 9'!S
M+"YS`9 >D"X$8"YU?'-=%T4H8 9@`C HQU=5"8!N!Y!D&Z L![!OYQG !M ?
M,3$U+= !T"? H" W.C(T#^!-*^>$5&\HQU1!4%(M,-I8!@!P'E(#($D", 20
M2P>0!4!''V!U<"OH=8QB:B+1*,=;=W@`D*1G70?P93HH<'<TT!<T,!HP&L%R
M-)!(=6W<:60:@!B@+'%S!; E/S\F2B'T"[874PKC"H!(;^,'X 6@=6QD'>$$
M80:0OQB@&L(/H#:"&6(`P&L:X>\%0!HP`) $D#\=T00@-7)?.X$=41J0&3(8
M`&,#D7#_': =@ .@&L(&X L1&K$>@/P@>0A@/I,!`"+"+= :D.TKL" 9P :!
M>1DR/)$<L5(B())S(AP0<#N5/]T72CY$<!IA')! +D '0)AS-2X=02YP,2\G
M, HO+N$P+Q U.5!-[B!$<1=$%O])!4 $`!D!_P1P/^0:P1B@*[ >I"2@'6%[
M#V %(" #4A@0/M$]L63?!1!!D3N0`9 4T' 9(1VS_P5!%U-(D4L@"7 :00JP
M"X#_&O _-"UP*< ;Q$!"#Z 9T?YW&8 ?`!JR&# _)D%A&7'])P!G2U(71!V1
M&\$I8DB13U*3'<,9I$ "9G4#H&ZY.D%T<D'C&?($``09,?YU! `8\"Y 3^ )
MX4V@3A*_%T0[I$UQ%- :85@!<S%0\PF .Y5S(1W24: D@3RP]T&1&* `D&Q+
MPB'P`P`902\M< F 37(71&,)``5D'2.0;QCP-4 <D" Z+7PI+A_?%UDR4#51
M+=!$\E,O,#,X.Y R@$Q0`"!]7^%G), K(#UB0!%+($)Z4#N68ARP6+$_)4HS
M0?Y$6[8"($&1,>$[D!]Q.J!\;B<%0"Y &9$_PAF 8>9D96,:PE0R7\ =PU6A
```

```
M_USA4\4[@0]@+B >@$=@.<7_5_(_E M@0$%4006Q2R!?A=]B%&%X!I! ,U&@
M>00@6T+O/(%=2Q=*)0=90%$*P$IA]PAP"7 ",&Q:03- !/(N0&]E8S1#0E$T
MT'<N,44A0/<=03[@#Z!R&<!%8A=$,!#_2: `@'!&.Y(ZL$L@`F `<&].\&@1
M`Q$9<6P:,!G +9,T0R<@-3=&0$U (?"M8,$N`9 1,"X%L&<72@41\0!XT ``
M`P`0$ `````#`!$0``````,`@!#_____0 `',,"4$8M_3\ !0 `(,,"4$8M_
M3\ !"P``@ @@!@``````P `````````$8``````X4````````#``* "" &````
M``# ````````1@`````0A0````````,`!8 (( 8``````, ````````!&````
M`%*%``"W#0```P`)@ @@!@``````P `````````$8``````84````````>`"*
M"" &``````# ````````1@````!4A0```0````0````X+C `"P`F@ @@!@``
M````P ````````$8``````#H4````````#`"> "" &``````# ````````1@``
M```1A0````````,`*8 (( 8``````, ````````!&``````!B%````````'@`X
M@ @@!@``````P `````````$8``````-H4```$````!`````````!X`.8 (( 8`
M``````, ````````!&``````#>%```!``````0`````````>`#J "" &``````#
M````````1@``````XA0```0```$`````````'@`]``$````%````4D4Z( ``
,```#``TT_3<``.8"
`
end


---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

55. [wxsig] Re: Fw: [weather] Humidity Sensor

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 15 Nov 2000 23:11:44 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119904-2000.11.15-23.22.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, I noticed that if my clock on the T238 is set for 4:05, I am
reporting 160500z on the air. My local hour is set to 22. Do I have
something set up wrong? Shouldn't it report 040500z?

Regards,

Rich - Wn0x

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] Re: Fw: [weather] Humidity Sensor

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Thu, 16 Nov 2000 05:57:15 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-119944-2000.11.16-05.07.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You definitely have something wrong. I reckon that you have the clock set
the wrong way around

----- Original Message -----
From: "Rich Beckwith" <wn0x@earthlink.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Thursday, November 16, 2000 12:11 AM
Subject: [wxsig] Re: Fw: [weather] Humidity Sensor

> Will, I noticed that if my clock on the T238 is set for 4:05, I am
> reporting 160500z on the air. My local hour is set to 22. Do I have
> something set up wrong? Shouldn't it report 040500z?
>
> Regards,
>
> Rich - Wn0x
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] Clock settings

From: William Beals <will@beals5.com>
Date: Thu, 16 Nov 2000 21:28:36 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120100-2000.11.16-23.05.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich:

Not sure what is going on. The T238 should be broadcasting whatever you
set the UTC time to. The only thing the local hour is used for (besides
the display) is to reset the "since midnight" stats.

It looks like you might be off by two digits. If you set the time to 4:05,
the string should be xx0405z where xx is the day of the month, not 040500z.
 I do not send seconds as part of the APRS stream, the format is MMDDHHMM.
 Might that explain some confusion?

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

58. [wxsig] Re: Clock settings

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Fri, 17 Nov 2000 08:43:07 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120153-2000.11.17-08.54.21--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Duh.... And of course the day I was playing around with this was the "16th". I have the APRS spec
right here and could have easily looked that up.

Thanks,

Rich Beckwith - Wn0x

>>> will@beals5.com 11/16/00 10:28PM >>>
Rich:

Not sure what is going on. The T238 should be broadcasting whatever you
set the UTC time to. The only thing the local hour is used for (besides
the display) is to reset the "since midnight" stats.

It looks like you might be off by two digits. If you set the time to 4:05,
the string should be xx0405z where xx is the day of the month, not 040500z.
 I do not send seconds as part of the APRS stream, the format is MMDDHHMM.
 Might that explain some confusion?

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org

To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

59. [wxsig] New Email program

From: "William Beals" <will@beals5.com>
Date: Fri, 17 Nov 2000 20:47:06 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120228-2000.11.17-21.57.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

One of the thorny issues with a reflector like this is various email programs and their different formats. A warming: I have upgraded to MS Office 2000, so if you see anything weird, please let me know. Hopefully I have configured it to send only plain text to this reflector.

will

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] APRSWXNET maps

From: "Russ Chadwick" <crb5@qwest.net>
Date: Sun, 19 Nov 2000 18:50:21 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120453-2000.11.19-20.01.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you load the two attached files into the images folder of Winaprs, and then restart the program, you will be able to go to the windows drop-down menu and select the Intellicast map feature. Then if you select DBreg, you will get a map of location of potential temperature measurements in the Denver-Boulder area with APRS icons imposed. My weather station is AP001 and should be present. The blue lines are crude contours of potential temperature.

If you select DBtime, you will get a map of the measurements for that time, which I think is 1600. I'm still trying to figure out how to update the time correctly. It is in the URL which is the first line of the files.

Because Winaprs uses mercator projections and these maps are in polar stereographic projections, things won't line up exactly and this non-alignment will be worse for larger maps. I have the information to do the same thing to any of the GIF images from the QCMS web site and will be happy to send it to anyone who is interested.

Russ
kb0tvj
[Attachment: DBtime.url; application/octet-stream; 135 bytes]
[Attachment: DBreg.url; application/octet-stream; 137 bytes]

61. [wxsig] Weather Stations data protocol

From: "Rodrigo Sequeira Matias" <rsmatias@alunos.isel.pt>
Date: Mon, 20 Nov 2000 16:42:01 -0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120539-2000.11.20-10.56.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can anybody tell me if there is a standard on Weather stations data protocol I can get to try developing my own software to decode some weather data from those common weather stations.

Rodrigo

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] wxsig digest: July 17, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:14 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120548-2000.11.20-12.53.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Monday, July 17, 2000.

1. RE: Another Question
2. RE: Another Question

Subject: RE: Another Question
From: Guy Story <kc5goi@tapr.org>
Date: Mon, 17 Jul 2000 11:34:38 -0500 (CDT)
X-Message-Number: 1

William, Jeff Brenton has a site that covers how to setup the KPC3 to work as a wx station instead of an APRS tracker. The url is http://www.theworks.com/~wa6ylb/kpcdigi.txt if you need to look it over. It is my intention to use the wx station to do just this. I was able to get a wx station before DS announced that they were out of them.

Guy

. On Sun, 16 Jul 2000, William Beals wrote:

> Date: Sun, 16 Jul 2000 22:46:22 -0600
> From: William Beals <will@beals5.com>
> Reply-To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Subject: [wxsig] RE: Another Question
>
> Doug:
>
> LTP mode is for the KPC-3+'s that have a secondary port for GPS use. We
> found a way to make it work for weather use too. The difference other than
> baud rate is that the secondary port does not need to be initialized into
> conversation mode. Hopefully that is covered in the latest manual.
>
> will
>
> -----Original Message-----
> From: Doug [SMTP:dbuhrman@radiks.net]
> Sent: Sunday, July 16, 2000 8:29 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Another Question
>
>
> Will:
> Thanks for the quick response on the temp device. Now I have another
> question. What is the
> difference between the TNC dir mode and the TNC lpt mode? Surely it's more
> that the baud rate. I
> didn't see anything in the docs as it looked like they were written for an
> earlier version of the
> software. Thanks again
>
> Doug K0DSP
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> begin 600 WINMAIL.DAT
> M>)\^(C$$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
> M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"```$$
> MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
> M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
> M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
> M!0```%--5% `````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
> M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
> M86P@26YT97)E<W0@1W)O=7 G`````(!"S !````&@```%--5% Z5UA324=
> M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!````'@#V7P$````?````
> M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$`````
> M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
> M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
> M``,`_U\``````@'V#P$````$`````````F%D`02 `0`=````4D4Z(%MW>'-I
> M9UT@06YO=&AE<B!1=65S=&EO;@!$"@$%@ ,`#@```- '!P`0`!8`+@`6````
> M2 $!((#``X```#0!P<`$ `6`"@`.P```&<!`0F `0`A````.1-# P.34U
> M135"1#0Q,4$X-38P,# P13@Y0C-#,#D`" <!`Y &`.@&```A`````"P`"``$`
> M```+`",```````,`)@``````"P`I```````#`"X```````,`-@``````0 `Y
> M`,!1#/6I[[\!'@!P``$````=````4D4Z(%MW>'-I9UT@06YO=&AE<B!1=65S

> M=&EO;@`````"`7$``0```!8````!O^^I]0.5`-206UX1U*A6``#HFSP)```>
> M`!X,`0````4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O
> M;0`#``800&?E00,`!Q#X`@``'@`($ $```!E````1$]51SI,5%!-3T1%25-&
> M3U)42$5+4$,M,RM35$A!5$A!5D5!4T5#3TY$05)94$]25$9/4D=04U5315=%
> M1D]53D1!5T%95$]-04M%25173U)+1D]25T5!5$A%4E53151/3U1(10`````"
> M`0D0`0```,P#``#(`P``=P4``$Q:1G7-!0%S/P`*`0,!]P*D`^,"`&-HP0K
> M<V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN
> M9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF(')$"&!G.@JB"H0*@$RH5% @!&(@
> M! `@`A)!<!T:!AP2U!#+=@S*R<$(!D`805 #W#R=AAP82 /H 6@%- *P)AY
> M(')$1BS1U %\,)U#Z N("!7&' "$"9U%- :87=A&Q!T;UD8,&%K&'$%0'<%
> ML&OY&+-W91GP&1 %P!P!'4&J;QPQ5!D19 :09@20=0GP8QAP;Q[#&=$#H&+T
> M874<T'(9\!AS&=,9`ND:G61O!Y%N(* CX G@6QS0'5%B&'$#``0',6G^>B11
> M"X =41JQ&D /D!GPCFD"(!@S'#%(;W !$/AU;&P=,1GB&)$%H"8A;R5S&/,+
> M8"' <P5 `X%U_0= +A=*`_ GD!=*"O0E0/PS-@% %: !0!$P(* %D$)T$'0Q
> M-B M+>)/?0409PN !T %T >0)E!G?F4MXQ=&+/0LP0L3+/9I,"TQ-#0!0"5
> M,3B., % #- Q@V(@1@-A"Q<P#))B%M0@6U--@1@0.F1B=6AR`X%&0"&@'_!K
> M<RXD,'2^71=%,K &8 (P,Q=3'+'Q'2 L($HG@!L0+; W4 ,!T#(0(#@Z,CD@
> M)%!--9=4;S,75$&T4%(<4%@&`"=08P<Q7"!)`C @,2F!1P-@=6)P-9AU8FHM
> M(3,76^1W> "09UT/X"/Q'M+^40I0*8 F@2^/,)HL1 NV]Q=3"N,*@%<J\1<U
> M'[`<,,U(!BW<75I8QXP.T&?&S `@""!*.0AP&UP'^!.911P(' <,4YO!^!)
> M_QH5/@5$`#Z4'#(GY1D!%T0['_DDL'0>D GP&/-43GY#'^$%P!A#`' D84IU
> M;/L%,01B/QQ -O)<">A'="_&:$$8 EP(A@A5QPQ24C6N&1N)P5 #Z!&TGD9
> M`*\+@#/0*-4CH&,$(&$$(/L=T0D`;QV@'- E0!VA&0'W&Q >D$W!=P40`D!*
> M,1C">P.1'J!R)4 >X28B)H)O^F9(F'-58$H`"L <(D,5#R\`"W(763.C2S!$
> M4^Y0*RX*@"]760A@&F!-P=9C"' @070GH7,\@ 3R[R2P)&,]@U&A.AT`!M >
> MH+AL<T %H$6 ' %R&D#^+EW!0K4=8!RP6\<:@1S#OP)@0S%44 # `Q$=46P>
> MH T:0"T]@S%P-3<P-WQ-0"5 *8 U, &0$3 N+06P9Q=*$?$`9& #`! 0````
> M``,`$1 ``````P" $/____] ``<PH H7-*GOOP% ``@PH H7-*GOOP$+``"
> M"" &`````# ````````1@`````#A0````````,``H ((8``````, `````
> M``!&`````!"%`````````P`%@ @@!@`````P ```````$8`````4H4``+<-
> M```#``F "" &`````# ````````1@`````!A0```````!X`(H ((8`````
> M`, ```````!&````%2%```!````! ```#@N, `+`": "" &`````# ````
> M```1@`````.A0````````,`)X ((8`````, ```````!&`````!&%````
> M`````P`I@ @@!@`````P ```````$8`````&(4````````>`#B "" &````
> M``# ````````1@`````VA0```0````$`````````'@`Y@ @@!@`````P ``
> M`````$8`````-X4```$`````!`````````!X`.H ((8``````, ```````!&
> M`````#B%```!`````0`````````>`#T``0````4```!213H@``````,`#33]
> %-P``_:*%
> `
> end
>
>
> ---
> You are currently subscribed to wxsig as: kc5goi@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

Subject: RE: Another Question
From: William Beals <will@beals5.com>
Date: Mon, 17 Jul 2000 20:30:09 -0600
X-Message-Number: 2

Guy:

Thanks for the information. I do need to get my KPC3+'s upgraded so I can use that LTP command, but the idea of spending $70 for a firmware upgrade is tough to get over. I seem to remember paying only $100 for the whole box. I suspect if I was trying to be completely legal, I'd have to spend the $70 for each of my TNCs too.

Glad you got a station in time. Hopefully the news from Dallas won't be TOTALLY bad when it comes out.

will

-----Original Message-----
From: Guy Story [SMTP:kc5goi@tapr.org]

Sent: Monday, July 17, 2000 10:35 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Another Question

William, Jeff Brenton has a site that covers how to setup the KPC3 to
work as a wx station instead of an APRS tracker. The url is
http://www.theworks.com/~wa6ylb/kpcdigi.txt if you need to look it
over. It is my intention to use the wx station to do just this. I was
able to get a wx station before DS announced that they were out of them.

Guy

. On Sun, 16 Jul 2000, William Beals wrote:

> Date: Sun, 16 Jul 2000 22:46:22 -0600
> From: William Beals <will@beals5.com>
> Reply-To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Subject: [wxsig] RE: Another Question
>
> Doug:
>
> LTP mode is for the KPC-3+'s that have a secondary port for GPS use. We
> found a way to make it work for weather use too. The difference other
than
> baud rate is that the secondary port does not need to be initialized into
> conversation mode. Hopefully that is covered in the latest manual.
>
> will
>
> -----Original Message-----
> From: Doug [SMTP:dbuhrman@radiks.net]
> Sent: Sunday, July 16, 2000 8:29 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Another Question
>
>
> Will:
> Thanks for the quick response on the temp device. Now I have another
> question. What is the
> difference between the TNC dir mode and the TNC lpt mode? Surely it's
more
> that the baud rate. I
> didn't see anything in the docs as it looked like they were written for
an
> earlier version of the
> software. Thanks again
>
> Doug K0DSP
>
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> begin 600 WINMAIL.DAT
> M>)\^(C$$`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
> M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"``````@`"```$$
> MD 8`U $```$````0`````P``, (````+``\.``````(!_P\!````40``````
> M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@5U@@4W!E8VEA;"!);G1E<F5S
> M="!'<F]U< !33510`'=X<VEG0&QI<W1S+G1A<'(N;W)G`````!X``C !````
> M!0```%--5% ``````'@`#, $````5````=WAS:6= ;&ES=',N=&%P<BYO<F<`
> M`````P`5# $````#`/X/!@```!X``3 !````(0```"=405!2(%=8(%-P96-I
> M86P@26YT97)E<W0@1W)O=7 G``````(!"S !````&@```%--5% Z5UA324=
> M3$E35%,N5$%04BY/4D<````#```Y``````L`0#H!`````'@#V7P$````?`````
> M5$%04B!76"!3<&5C:6%L($EN=&5R97-T($=R;W5P```"`?=?`0```%$``````
> M````@2L?I+ZC$!F=;@#=`0]4`@````!405!2(%=8(%-P96-I86P@26YT97)E
> M<W0@1W)O=7 `4TU44 !W>'-I9T!L:7-T<RYT87!R+F]R9P`````#`/U?`0``
> M``,`_U\``````@'V#P$````$`````````F%D`02 `0`=````4D4Z(%MW>'-I
> M9UT@06YO=&AE<B!1=65S=&EO;@!$"@$%@ ,`#@```- '!P`0`!8`+@`6````
> M2 $!((#``X```#0!P<`$ `6`"@`.P```&<!`0F `0`A````.1-# P.34U
> M135"1#0Q,4$X-38P,# P13@Y0C-#,#D`" <!`Y &`.@&```A````"P`"``$`
> M```+`",```````,`)@``````"P`I```````#`"X```````,`-@``````0 `Y
> M`,!1#/6I[[\!'@!P``$````=````4D4Z(%MW>'-I9UT@06YO=&AE<B!1=65S
> M=&EO;@`````"`7$``0```!8````!O^^I]0.5`-206UX1U*A6``#HFSP)```>
> M`!X,`0````4```!33510`````!X``PP!````$ ```'=I;&Q 8F5A;',U+F-O
> M;0`#``800&?E00,`!Q#X`@``'@`($ $```!E````1$]51SI,5%!-3T1%25-&
> M3U)42$5+4$,M,RM35$A!5$A!5D5!4T5#3TY$05)94$]25$9/4D=04U5315=%

> M1D]53D1!5T%95$]-04M%25173U)+1D]25T5!5$A%4E53151/3U1(10`````"
> M`0D0`0```,P#``#(`P``=P4``$Q:1G7-!0%S/P`*`0,!]P*D`^,"`&-HP0K
> M<V5T," '$P*#0P!0#N9P<G$R#^9]$PJ ",@@.PEO,C4U2P* "H%V")!W:PN
> M9-HT#&!C`% +`V,`00M@0&YG,3 S,PNF(')$"&!G.@JB"H0*@$RH5% @!&(@
> M! `@`A)!<!T:!AP2U!#+=@S*R<$(!D`805 #W#R=AAP82 /H 6@%- *P)AY
> M(')$1BS1U %\,)U#Z N("!7&' "$"9U%- :87=A&Q!T;UD8,&%K&'$%0'<%
> ML&OY&+-W91GP&1 %P!P!'4&J;QPQ5!D19 :09@20=0GP8QAP;Q[#&=$#H&+T
> M874<T'(9\!AS&=,9`ND:G61O!Y%N(* CX G@6QS0'5%B&'$#`'0',6G^>B11
> M"X =41JQ&D /D!GPCFD"(!@S'#%(;W !$/AU;&P=,1GB&)$%H"8A;R5S&/,+
> M8"' <P5 `X%U_0= +A=*`_ GD!=*"O0E0/P5-@% %: !0!$P(* %D$)T$'0Q
> M-B M+>)/?0409PN !T %T >0)E!G?F4MXQ=&+/0LP0L3+/9I,"TQ-#0!0"5
> M,3B., % #- Q@V(@1@-A"Q<P#))B%M0@6U--@1@0.F1B=6AR`X%&0"&@'_!K
> M<RXD,'2^71=%,K &8 (P,Q=3'+'Q'2 L($HG@!L0+; W4 ,!T#(0(#@Z,CD@
> M)%!--9=4;S,75$&T4%(<4%@&`"=08P<Q7"!)`C @,2F!1P-@=6)P-9AU8FHM
> M(3,76^1W> "09UT/X"/Q'M+^40I0*8 F@2^/,)HL1 NV]Q=3"N,*@%<J\1<U
> M'[`<,,U(!BW<75I8QXP.T&?&S `@""!*.0AP&UP'^!.911P(' <,4YO!^!)
> M_QH5/@5$`#Z4'#(GY1D!%T0['_DDL'0>D GP&/-43GY#'^$%P!A#`' D84IU
> M;/L%,01B/QQ -O)<">A'="_&:$$8 EP(A@A5QPQ24C6N&1N)P5 #Z!&TGD9
> M`*\+@#/0*-4CH&,$(&$$(/L=T0D`;QV@'- E0!VA&0'W&Q >D$W!=P40`D!*
> M,1C">P.1'J!R)4 >X28B)H)O^F9(F'-58$H`"L <(D,5#R\`"W(763.C2S!$
> M4^Y0*RX*@"]760A@&F!-P=9C"' @070GH7,\@ 3R[R2P)&,]@U&A.AT`!M >
> MH+AL<T %H$6 ' %R&D#^+EW!0K4=8!RP6\<:@1S#OP)@0S%44 # `Q$=46P>
> MH T:0"T]@S%P-3<P-WQ-0"5 *8 U, &0$3 N+06P9Q=*$?$`9& #`! 0````
> M``,`$1 ``````P" $/____] ``<PH H7-*GOOP% ``@PH H7-*GOOP$+``"
> M"" &`````# ````````1@`````#A0````````,``H ((8``````, `````
> M``!&`````!"%`````````P`%@ @@!@`````P ```````$8`````4H4``+<-
> M```#``F "" &`````# ````````1@`````!A0```````!X`(H ((8`````
> M`, ```````!&`````%2%```!````! ```#@N, `+`": "" &`````# ````
> M````1@`````.A0````````,`)X ((8`````, ```````!&`````!&%````
> M`````P`I@ @@!@`````P ```````$8`````&(4````````>`#B "" &````
> M``# ````````1@`````VA0```0````$`````````'@`Y@ @@!@`````P ``
> M`````$8`````-X4```$````!`````````!X`.H ((8``````, ```````!&
> M`````#B%```!`````0`````````>`#T``0````4```!213H@`````,`#33]
> %-P``_:*%
> `
> end
>
>
> ---
> You are currently subscribed to wxsig as: kc5goi@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

73,

Guy Story
KC5GOI
kc5goi@tapr.org
http://www.kc5goi.net

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

63. [wxsig] wxsig digest: July 18, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:16 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120549-2000.11.20-12.57.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Tuesday, July 18, 2000.

1. Re: Ultimeter WX Data Decoding
2. Re: Ultimeter WX Data Decoding
3. Rain Gauge Fixed!
4. ARRL and TAPR 19th Annual Digital Communications Conference
5. RE: Rain Gauge Fixed!
6. Re: Ultimeter WX Data Decoding
7. Re: Rain Gauge Fixed!
8. Re: Rain Gauge Fixed!

Subject: Re: Ultimeter WX Data Decoding
From: Brian Short <k7on@earthlink.net>

Date: Tue, 18 Jul 2000 04:01:44 +0000
X-Message-Number: 1

Is there a source for the entire format of the Peet Brothers U-100?

I'm sorry if this is repeated question, but I don't have the information
and have not found it very efficiently as yet.

TIA, Brian

At 09:57 AM 7/14/00, Ian Wade wrote:
>I'm adding Ultimeter WX decoding to <APRSdec>, but I have a few
>questions:
>
>Ultimeter II
>------------
>   What are the "upper" and "lower" rain gauges?
>
>   How does anyone reading the data know whether to divide the upper and
>   lower rain gauge values by 10 or 100?
>
>
>Ultimeter 2000 Packet Mode ($ULTW mode)
>---------------------------------------
>   What is the barometer delta value?
>
>   What is the barometer correction factor?
>
>   What is the algorithm for applying the correction?
>
>   Does field 12 contain "Rain Long Term" or "Today's Rain Total"?

--
Seek those who find your road agreeable, your personality and mind
stimulating, your philosophy acceptable, and your experience helpful.
Let those who do not, seek their own kind. -Henri Fabre
--
mailto:k7on@earthlink.net
--

Subject: Re: Ultimeter WX Data Decoding
From: David Norris <dave@webaugur.com>
Date: Tue, 18 Jul 2000 10:52:06 -0500
X-Message-Number: 2

Brian Short wrote:
> Is there a source for the entire format of the Peet Brothers U-100?

Is it different than other stations? The web site says that the format
is the same for the 2000, 800, 500, and 100 models. Here are the
published serial specs (II and others):
http://www.peetbros.com/faqs.htm#Q6

If this is not correct then you might try emailing
(jstewart@monmouth.com) or calling Peet Bros (1-800-USA-PEET). They are
normally very good about helping with technical information.

--
,David Norris
  Dave's Web - http://www.webaugur.com/dave/
  Dave's Weather - http://www.webaugur.com/dave/wx
  ICQ Universal Internet Number - 412039
  E-Mail - dave@webaugur.com

Subject: Rain Gauge Fixed!
From: "Debbie Beckwith" <beckwd@earthlink.net>
Date: Wed, 19 Jul 2000 13:09:16 -0500
X-Message-Number: 3

You can imagine my dissapointment when within a month of being installed, my
rain gauge promptly quit! Confident in my wiring and installation, I was
sure I had a bad unit. When I finally checked the unit I found the "tipper"
had been securely fastened to its frame by a spider web! A little hosing

out, and my rain gauge is back on line.

Rich Beckwith Wn0x

Subject: ARRL and TAPR 19th Annual Digital Communications Conference
From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Tue, 18 Jul 2000 19:21:10 -0400
X-Message-Number: 4

ARRL and TAPR 19th Annual
Digital Communications Conference
September 22-24, 2000 - Orlando, Florida

For more information see: http://www.tapr.org/dcc

Information
Mark your calendar and start making plans to attend the year's premier event in digital communications. The 19th Annual ARRL and TAPR Digital Communications Conference will be held September 22-24, 2000, in Orlando, Florida - just minutes from the Orlando International Airport.

The ARRL and TAPR Digital Communications Conference is an international forum for radio amateurs in digital communications, networking, and related technologies to meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. The Digital Communications Conference is not just for the digital expert, but also for digitally oriented amateurs of all levels of experience.

A Conference for the Beginner as well
The conference is not just for the digital expert. As in years past an entire session strand with beginning, intermediate, and advanced presentations on selected topics in digital communications will be offered. Some of the topics will include: APRS, Satellite Communications, TCP/IP, Digital Radio, Spread Spectrum and other introductory topics. Come to the conference and hear these topics presented by the experts!

Area Attractions
The Orlando Florida area is famous for its attractions and vacation spots. Disney World, Universal Studios, and Sea World (just to name a few) are within 15 minutes of the hotel. Shuttle service from the hotel will be available for a small fee. Cape Canaveral and Cocoa Beach are a 30 minute drive East of the hotel.

Symposia, Seminars and Banquet
Two symposia/seminars will be held which allow those with additional time and interest to make the most of the Conference. For those who may have interest in just one symposium or seminar, registration for the conference is not required to attend these activities. This allows maximum flexibility for those who may want to participate during the Digital Communications Conference, but do not have an entire weekend to devote to the event.

The Fourth APRS National Symposium will be held on Friday and will be moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely include many APRS software authors, such as Bob Bruninga, WB4APR (the father ofAPRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), Mike Musick, N0QBF (developer of PocketAPRS), and other nationally known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

On Saturday night the DCC Banquet will be held. A guest speaker will speak after the banquet and a prize drawing will top the evening. The Grand Prize is a Palm VII Personal Digital Assistant.

The Sunday morning seminar will be focused on PIC development, design, and programming. This five-and-a-half hour seminar will focus

on the things you need to know now in order to understand and begin to participate in PIC development.

Co-Hosts
The 2000 ARRL and TAPR Digital Communications Conference local co-hosts will be Lake Monroe Amateur Radio Society (http://www.qsl.net/lmars/),Orange County ARES/RACES(http://evcom.net/~jvoisin/ares.htm), Seminole County ARES/RACES (http://wwww.geocities.com/capecanaveral/launchpad/4773), and Orlando Amateur Radio Club(http://www.oarc.org/).

International Co-Hosts PRUG (Packet Radio User Group of Japan) will be the International co-host for a third year running. PRUG will be hosting an informal social Friday evening before their seminar and symposium is held. Visit http://www.prug.or.jp for more information about PRUG.

Call for Papers
Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the Conference is not required for publication. Papers are due by August 7th, 2000, and should be submitted to

Maty Weinberg, ARRL
225 Main Street
Newington, CT 06111

or via the Internet to

   lweinberg@arrl.org

Information on paper submission guidelines are available on-line at

   http://www.tapr.org/dcc

Hotel
Conference presentations, meetings, and seminars will be held at the Orlando Airport Marriott. It is highly recommended that you book your room prior to arriving. A special DCC room rate of $89/single and $89/double per night has been blocked for 50 rooms and is available until September 1st, 2000. Once the 50 rooms have been reserved, room rates will increase. So be sure to book your rooms early! The hotel provides transportation to and from the Orlando International Airport. Please contact the hotel to arrange specific transportation needs.

Orlando Airport Marriott (conference hotel)
7499 Augusta Drive
Orlando, FL 32822
Phone 407-851-9000, Fax 407-857-6211
(http://marriotthotels.com/MCOAP/)

What you can expect at DCC 2000
- A full day of papers and breakouts for the beginner to the advanced
- Two seminars/symposiums
- The fifth annual Student Paper session.
- A banquet with Special Guest Speaker.
- Informal get-togethers throughout the weekend.
- TAPR Membership Meeting
- An event at which the most important new developments in amateur digital communications are announced.
- Digital 'movers and shakers' from all over the world in attendance.

There are few activities where your participation can be so much fun and important! What a great way to share and renew your enthusiasm for digital amateur radio! A get-together with colleagues and bringing each other up to date on your latest work -- all this, and more, for an unforgettable weekend of amateur radio and digital communications. We hope to see you at the ARRL and TAPR Digital Communications Conference on September 22-24, 2000!

Full information on the conference and hotel information can be obtained by contacting:

Tucson Amateur Packet Radio
Phone: (940) 383-0000.
Fax: (940) 566-2544
Email: tapr@tapr.org
Web: http://www.tapr.org

Registration Form
Contact the TAPR office by Phone 940-383-0000, Fax 940-566-2544, or
Internet: http://www.tapr.org and tapr@tapr.org to register or for
additional information.

Conference Registration includes: Conference Proceedings, Sessions,
Meetings, and Lunch on Saturday.

- Pre-Registration (before Sept 1st)

$45.00 _____

- Registration (after Sept 1) or at door

$55.00 _____

- Saturday Evening Dinner (Limited Space)
Dinner with Guest Speaker
Prize Drawing

$30.00 _____

Symposia/Seminars

- 4th Annual APRS National Symposium
Friday, 1pm - 7pm. $25.00 _____

- Sunday Seminar
PIC Design, Development, and Programming

Sunday, 8:30 am - 2 pm. $20.00 _____

TOTAL _____

Name/Call:

Street Address:

City/State/Zip:

Country:

Phone Number:

Email:

Charge my credit card (circle one):

VISA MasterCard

Acct:

Expiration Date:

Signature on card:

Mail completed registration form with check to:
TAPR
8987-309 E Tanque Verde Rd #3378
Tucson, AZ 85749-9399

Or check http://www.tapr.org/dcc for an on-line registration form.

A registration packet will be mailed in September upon receipt of
registration form and payment.

Subject: RE: Rain Gauge Fixed!
From: William Beals <will@beals5.com>
Date: Tue, 18 Jul 2000 20:24:49 -0600
X-Message-Number: 5

Rich:

I guess that falls under "mechanical issues" somehow!

will

-----Original Message-----
From: Debbie Beckwith [SMTP:beckwd@earthlink.net]
Sent: Wednesday, July 19, 2000 12:09 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Rain Gauge Fixed!

You can imagine my dissapointment when within a month of being installed, my rain gauge promptly quit! Confident in my wiring and installation, I was sure I had a bad unit. When I finally checked the unit I found the "tipper" had been securely fastened to its frame by a spider web! A little hosing out, and my rain gauge is back on line.

Rich Beckwith Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] wxsig digest: July 12, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:11 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120550-2000.11.20-12.58.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Wednesday, July 12, 2000.

1. radiation shield
2. Re: radiation shield
3. Pine
4. Re: Pine
5. Re: radiation shield
6. RE: radiation shield
7. Circuit Cellar Ink Cover

Subject: radiation shield
From: smbren@iname.com
Date: Wed, 12 Jul 2000 14:03:46 -0400 (EDT)
X-Message-Number: 1

I already have the Dallas Semiconductor WX station and will order the T-238 kit soon. There is apparently no igate in this area (Big Bend -- West Texas), but there is a ham digipeater that links to NWS Midland Forecast Office. I will try to hit that repeater.

How can I make a homebrew radiation shield?

Steve Brennecke
KB5SJU

Get free personalized email at http://email.lycos.com

Subject: Re: radiation shield
From: jeffa@ix.netcom.com
Date: Wed, 12 Jul 2000 17:01:27 -0400
X-Message-Number: 2

Just joined the list (T-238 on order). What's this about a shield requirement?

Thanks for any info you can provide.

- Jeff, WA6AHL

TAPR WX Special Interest Group <wxsig@lists.tapr.org> wrote:
> I already have the Dallas Semiconductor WX station and will order the T-238 kit soon. There is apparently no igate in this area (Big Bend -- West Texas), but there is a ham digipeater that links to NWS Midland Forecast Office. I will try to hit that repeater.

How can I make a homebrew radiation shield?

Steve Brennecke
KB5SJU

Get free personalized email at http://email.lycos.com

You are currently subscribed to wxsig as: jeffa@ix.netcom.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---

Subject: Pine
From: Shrrah Castillo <shrrah@fcfm.buap.mx>
Date: Wed, 12 Jul 2000 16:02:42 -0500 (CDT)
X-Message-Number: 3

Hello

Sorry for the troubles with the PDF attached file that I sent on monday, I
sent it using the program PINE version 3.96 on a Sun Sparc Solaris 2.6, I
use Eudora at home for reading Mail and des-attaching files without
troubles.

73, Shrrah   XE1TD

Subject: Re: Pine
From: John Koster <w9ddd@tapr.org>
Date: Wed, 12 Jul 2000 16:10:25 -0500 (CDT)
X-Message-Number: 4

I use pine 4.2 on BSDI?.? and have no problems with attachments unless I
forget to actually attach. Don't recall what versions were on this box
before, but I've used pine since '89 or so. Perhaps something isn't
confiured right, but don't know what off the top of my head.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==========
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Wed, 12 Jul 2000, Shrrah Castillo wrote:

> Hello
>
> Sorry for the troubles with the PDF attached file that I sent on monday, I
> sent it using the program PINE version 3.96 on a Sun Sparc Solaris 2.6, I
> use Eudora at home for reading Mail and des-attaching files without
> troubles.
>
> 73, Shrrah   XE1TD
>
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: Re: radiation shield
From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 12 Jul 2000 17:23:22 -0600
X-Message-Number: 5

>

> How can I make a homebrew radiation shield?
>
> Steve Brennecke
> KB5SJU
>

I've made four radiation shields to shield the temperature (and soon
humidity) sensors from solar insolation. If the Dallas 1-Wire wx station is
placed in the sun, it will have errors approaching 20 deg F. This shield
prevents thw sun from shining on the sensor and lets the cross wind carry
away the heat due to the direct sun. I've written up how to do this, but
need to add the part about building the mount.

I have three pictures of the shield and mounting. It will mount on a 1"x1"
or larger square tube. I wouldn't mount it next to the anemometer because
it could affect the wind being measured. My pictures are all bigger than
the 100 KB limit for e-mails to the wxsig. So, if anyone would like the
pictures, just send me an e-mail and I'll send the pictures back to you.

Russ
kb0tvj

Subject: RE: radiation shield
From: William Beals <will@beals5.com>
Date: Wed, 12 Jul 2000 20:21:31 -0600
X-Message-Number: 6

Folks:

I have the instructions and pictures from Russ and need to get them on the
website. I will try for this weekend at the latest. I am in the process
of making a few changes to the website structure to accomodate more pages
(using frames) and this is taking a bit more time than adding a single
extra page.

Jeff: The radion shield is NOT required--but a good idea if you want to
have accurate readings. The temperature sensor in the Dallas outdoor unit
can get pretty innacurate if the wrong conditions exist (as explained by
Russ) and the radiation shield Russ has made is a way to get much better
data transmitted.

will

-----Original Message-----
From: smbren@iname.com [SMTP:smbren@iname.com]
Sent: Wednesday, July 12, 2000 12:04 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] radiation shield

I already have the Dallas Semiconductor WX station and will order the T-238
kit soon. There is apparently no igate in this area (Big Bend -- West
Texas), but there is a ham digipeater that links to NWS Midland Forecast
Office. I will try to hit that repeater.

How can I make a homebrew radiation shield?

Steve Brennecke
KB5SJU

Get free personalized email at http://email.lycos.com

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] wxsig digest: July 14, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:12 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120551-2000.11.20-12.58.12--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Friday, July 14, 2000.

1. Ultimeter WX Data Decoding
2. help with heathkit
3. Sensors, website, and APRS docs
4. RE: help with heathkit
5. Re: radiation shield
6. Re: Ultimeter WX Data Decoding

Subject: Ultimeter WX Data Decoding
From: Ian Wade <Ian.Wade@care4free.net>
Date: Fri, 14 Jul 2000 10:57:35 +0100
X-Message-Number: 1

I'm adding Ultimeter WX decoding to <APRSdec>, but I have a few
questions:

Ultimeter II

  What are the "upper" and "lower" rain gauges?

  How does anyone reading the data know whether to divide the upper and
  lower rain gauge values by 10 or 100?

Ultimeter 2000 Packet Mode ($ULTW mode)

  What is the barometer delta value?

  What is the barometer correction factor?

  What is the algorithm for applying the correction?

  Does field 12 contain "Rain Long Term" or "Today's Rain Total"?

73
Ian, G3NRW
Technical Editor, APRS Protocol Specification

--
+--+
| APRS on 144.800 [IO91SX]   ~55km/35 miles NNW of London |
| email: g3nrw@tapr.org |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.tapr.org/~g3nrw |
| Mic-Encoder Software: http://www.tapr.org/~g3nrw |
+--+

Subject: help with heathkit
From: shelden3@ionet.net
Date: Fri, 14 Jul 2000 07:59:26 -0500 (CDT)
X-Message-Number: 2

Hello,
I'm new to the sig so this may have been posted in the past.
I just bought (rather cheaply too), a heathkit #1590 anometer and wind
direction indicator. I was wondering if anyone knows if there is a 3rd party
interface board I can connect the sensors to so that the information to be
stored on my computer and possibly be able to send out to APRS? Thanks for any
help.
Charlie Shelden
KC5NBH
BridgeCreek, Ok

Subject: Sensors, website, and APRS docs
From: William Beals <will@beals5.com>
Date: Fri, 14 Jul 2000 07:06:49 -0600
X-Message-Number: 3

Folks:

Russ: That is a good-looking enclosure for being made of off-the-shelf
parts! Unless you would prefer otherwise, I'll add that to the updates I
intend for the website.

All: Quite a few updates should go up this weekend:
1) New Frames-based browsing to make my life easier (and hopefully yours
too!)
2) Add temperature shield docs
3) Add beginnings of Russes wind sensor
4) Fix some busted links

Ian: Our project (mostly) is based on the APRS spec rather than being its
own project that needs to have its protocols and such added to that spec.
 The only outside specs I've had to deal with is my Peet emulation mode. I
do have a big question though: I have been asking for some identifier that
is applicable to weather stations like ours, alas all that is currently
included is identifiers suchs as Windows, DOS, Mac, Linux, etc. There
wasn't any provision for embedded stations like ours. Bob said there would
be in the next rev. Is it?

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: RE: help with heathkit
From: William Beals <will@beals5.com>
Date: Fri, 14 Jul 2000 08:29:39 -0600
X-Message-Number: 4

Charlie:

Alas I don't know much about those sensors or the interface they use.

will

-----Original Message-----
From: shelden3@ionet.net [SMTP:shelden3@ionet.net]
Sent: Friday, July 14, 2000 6:59 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] help with heathkit

Hello,
I'm new to the sig so this may have been posted in the past.
I just bought (rather cheaply too), a heathkit #1590 anometer and wind
direction indicator. I was wondering if anyone knows if there is a 3rd party
interface board I can connect the sensors to so that the information to be
stored on my computer and possibly be able to send out to APRS? Thanks for any
help.
Charlie Shelden
KC5NBH
BridgeCreek, Ok

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

66. [wxsig] wxsig digest: July 11, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:09 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120552-2000.11.20-13.00.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Tuesday, July 11, 2000.

1. Question for the List Gurus

2. RE: Question for the List Gurus
3. RE: Question for the List Gurus
4. RE: Question for the List Gurus
5. WS-1 kit status
6. RE: WS-1 kit status

Subject: Question for the List Gurus
From: Hosking William-P05328 <Bill.Hosking@motorola.com>
Date: Tue, 11 Jul 2000 07:08:42 -0700
X-Message-Number: 1

I'm seeing something on digests that I don't see in "normal" emails.
Attachments come through as encoded text. For example, Shrrah's recent PDF
attachment generated 20+ pages of text. I telnet into my IP in the mornings
from work and dump the digest to my local printer here in the office.
If that's the price I have to pay to get wxsig so be it. Just curious.

Bill W7JSW

Subject: RE: Question for the List Gurus
From: "Steven R. Bible" <steveb@dandin.com>
Date: Tue, 11 Jul 2000 10:41:50 -0400
X-Message-Number: 2

Bill,

I am the admin for this list. The Lyris listserver passes the attachment
unharmed. I received the attachment fine (I use Outlook 2000).

Is there a possiblity that the computer you received (the email client) it
on was not able to decode the attachment? There are several attachment
protocols, it is possible that the one Shrrah used was not available on your
email client.

 - Steve, N7HPR
   n7hpr@tapr.org

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Hosking
> William-P05328
> Sent: Tuesday, July 11, 2000 10:09 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Question for the List Gurus
>
>
> I'm seeing something on digests that I don't see in "normal" emails.
> Attachments come through as encoded text. For example, Shrrah's recent PDF
> attachment generated 20+ pages of text. I telnet into my IP in
> the mornings
> from work and dump the digest to my local printer here in the office.
> If that's the price I have to pay to get wxsig so be it. Just curious.
>
> Bill W7JSW
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: RE: Question for the List Gurus
From: John Koster <w9ddd@tapr.org>
Date: Tue, 11 Jul 2000 11:00:26 -0500 (CDT)
X-Message-Number: 3

Is it possible that Lyris does something different for the digest? Imagine
the digest has 10 messages and 3 have attachments ...   how do you handle
them? All attached to the digest "envelope" or encoded in the body of the
each message of the digest. ????

Is it possible that the process of spooling to the printer caused it to
happen?

John Koster, W9DDD
<w9ddd@tapr.org>

  ==
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Tue, 11 Jul 2000, Steven R. Bible wrote:

> Bill,
>
> I am the admin for this list. The Lyris listserver passes the attachment
> unharmed. I received the attachment fine (I use Outlook 2000).
>
> Is there a possiblity that the computer you received (the email client) it
> on was not able to decode the attachment? There are several attachment
> protocols, it is possible that the one Shrrah used was not available on your
> email client.
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>
>
> > -----Original Message-----
> > From: bounce-wxsig-15059@lists.tapr.org
> > [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Hosking
> > William-P05328
> > Sent: Tuesday, July 11, 2000 10:09 AM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] Question for the List Gurus
> >
> >
> > I'm seeing something on digests that I don't see in "normal" emails.
> > Attachments come through as encoded text. For example, Shrrah's recent PDF
> > attachment generated 20+ pages of text. I telnet into my IP in
> > the mornings
> > from work and dump the digest to my local printer here in the office.
> > If that's the price I have to pay to get wxsig so be it. Just curious.
> >
> > Bill W7JSW
> >
> > ---
> > You are currently subscribed to wxsig as: srbible@gate.net
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: RE: Question for the List Gurus
From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 11 Jul 2000 12:26:42 -0400
X-Message-Number: 4

Opps, should have paid closer attention to the fact you are mentioning a
digest. I'll look into this. Since I received the attachment but not in a
digest.

- Steve

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of John Koster
> Sent: Tuesday, July 11, 2000 12:00 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Question for the List Gurus
>

>
> Is it possible that Lyris does something different for the digest? Imagine
> the digest has 10 messages and 3 have attachments ...   how do you handle
> them? All attached to the digest "envelope" or encoded in the body of the
> each message of the digest. ????
>
> Is it possible that the process of spooling to the printer caused it to
> happen?
>
> John Koster, W9DDD
> <w9ddd@tapr.org>
>
>   ==
> None of the above represents the opinion or policy of anyone or any entity
> other than John Koster unless expressly so stated above.
>
> On Tue, 11 Jul 2000, Steven R. Bible wrote:
>
> > Bill,
> >
> > I am the admin for this list. The Lyris listserver passes the
> attachment
> > unharmed. I received the attachment fine (I use Outlook 2000).
> >
> > Is there a possiblity that the computer you received (the email
> client) it
> > on was not able to decode the attachment? There are several attachment
> > protocols, it is possible that the one Shrrah used was not
> available on your
> > email client.
> >
> > - Steve, N7HPR
> >   n7hpr@tapr.org
> >
> >
> > > -----Original Message-----
> > > From: bounce-wxsig-15059@lists.tapr.org
> > > [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Hosking
> > > William-P05328
> > > Sent: Tuesday, July 11, 2000 10:09 AM
> > > To: TAPR WX Special Interest Group
> > > Subject: [wxsig] Question for the List Gurus
> > >
> > >
> > > I'm seeing something on digests that I don't see in "normal" emails.
> > > Attachments come through as encoded text. For example,
> Shrrah's recent PDF
> > > attachment generated 20+ pages of text. I telnet into my IP in
> > > the mornings
> > > from work and dump the digest to my local printer here in the office.
> > > If that's the price I have to pay to get wxsig so be it. Just curious.
> > >
> > > Bill W7JSW
> > >
> > > ---
> > > You are currently subscribed to wxsig as: srbible@gate.net
> > > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: w9ddd@tapr.org
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: WS-1 kit status
From: "Ehler, Kyle" <kehler@lsil.com>

```
Date: Tue, 11 Jul 2000 13:58:15 -0500
X-Message-Number: 5

This message is in MIME format. Since your mail reader does not understand
this format, some or all of this message may not be legible.

------_=_NextPart_001_01BFEB69.FB5126DA
Content-Type: text/plain;
        charset="iso-8859-1"

Yo,
I'm back from sabbatical and was about to order one or two more weather
station kits.
I had assembled and installed the one I had at my folks place in Wyoming so
I no longer have one.
The revelation that DS has sold off all the kits leaves me in the cold.
This will force me to close the chapter and move on as I'm too cheap to pay
MSRP on one of these.
Apologies offered.

Kyle Ehler  kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
LSI Logic Corporation
3718 N. Rock Road
U.S.A.  Wichita, Kansas  67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315

------_=_NextPart_001_01BFEB69.FB5126DA
Content-Type: text/html;
        charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
<HTML>
<HEAD>
<META HTTP-EQUIV=3D"Content-Type" CONTENT=3D"text/html; =
charset=3Diso-8859-1">
<META NAME=3D"Generator" CONTENT=3D"MS Exchange Server version =
5.5.2650.12">
<TITLE>WS-1 kit status</TITLE>
</HEAD>
<BODY>

<P><FONT SIZE=3D2 FACE=3D"Arial">Yo,</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial">I'm back from sabbatical and was =
about to order one or two more weather station kits.</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial">I had assembled and installed the one =
I had at my folks place in Wyoming so I no longer have one.</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial">The revelation that DS has sold off =
all the kits leaves me in the cold.</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial">This will force me to close the =
chapter and move on as I'm too cheap to pay MSRP on one of =
these.</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial">Apologies offered.</FONT>
</P>

<P><FONT SIZE=3D5 FACE=3D"ZapfChancery">Kyle Ehler</FONT> <FONT =
SIZE=3D5 FACE=3D"Book Antiqua"></FONT> <A =
HREF=3D"mailto:kyle.ehler@lsil.com"><U><FONT COLOR=3D"#0000FF" SIZE=3D2 =
FACE=3D"Arial">kyle.ehler@lsil.com</FONT></U></A><FONT SIZE=3D2 =
FACE=3D"Book Antiqua"> </FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial Black">Assistant Design =
Engineer</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial Black">LSI Logic Corporation</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial Black">3718 N. Rock Road</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Arial Black">U.S.A.  Wichita, =
Kansas  67226</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Courier New">Ph. 316 636 8657</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Courier New">Fax 316 636 8889</FONT>
<BR><FONT SIZE=3D2 FACE=3D"Courier New">Fax 316 636 8315</FONT>
</P>

</BODY>
</HTML>
------_=_NextPart_001_01BFEB69.FB5126DA--

------------------------------------------------------------------------
```

Subject: RE: WS-1 kit status
From: William Beals <will@beals5.com>
Date: Tue, 11 Jul 2000 21:41:36 -0600
X-Message-Number: 6

Kyle:

Things look a bit bleak, but not all hope is lost. Russ is already looking
at alternatives to the Dallas Sensor that will still be cheap and hopefully
even better. Check the website every once in a while and see if we have
alternatives listed. Hope to hear from you again in the future.

will

-----Original Message-----
From: Ehler, Kyle [SMTP:kehler@lsil.com]
Sent: Tuesday, July 11, 2000 12:58 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] WS-1 kit status

Yo,
I'm back from sabbatical and was about to order one or two more weather
station kits.
I had assembled and installed the one I had at my folks place in Wyoming so
I no longer have one.
The revelation that DS has sold off all the kits leaves me in the cold.
This will force me to close the chapter and move on as I'm too cheap to pay
MSRP on one of these.
Apologies offered.

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>
Assistant Design Engineer
LSI Logic Corporation
3718 N. Rock Road
U.S.A. Wichita, Kansas 67226
Ph. 316 636 8657
Fax 316 636 8889
Fax 316 636 8315
 << File: ATT00001.html >>

67. [wxsig] wxsig digest: July 23, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:22 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120553-2000.11.20-13.01.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Sunday, July 23, 2000.

1. RE: T-238 Kit Status 7/19/00

Subject: RE: T-238 Kit Status 7/19/00
From: William Beals <will@beals5.com>
Date: Sun, 23 Jul 2000 18:58:27 -0600
X-Message-Number: 1

Folks:

Out since last wednesday between a business trip and long weekend camping...

Jack: Such things are definitely being looked at, but it is a lot of work before anything definite.

will

-----Original Message-----
From: Smith, Jack R SGT 658 QM CO [SMTP:Jack.Smith1@usarc-emh2.army.mil]
Sent: Wednesday, July 19, 2000 9:36 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: T-238 Kit Status 7/19/00

Would it be economical to develop a board and make a duplicate (more or
less) of the 1-wire station? I would think it would, and the "weatherproof
coating" is easy to duplicate using thinned Dip-It (or Tool-Dip). The only
snag would be developing the anemometer cups and attachment, but I don't

think that would be all that difficult, either. The rest of the items could
fit in any suitable box, or even a PVC pipe enclosure.

Just my two cents... I'll accept change!

Jack KE4LWT

> The initial kitting of the T-238 is for 100 kits. Since Dallas
> Semiconductor has discontinued the 1-Wire Weather Station, we
> are assessing
> other alternatives. Anyone that would like to suggest construction of
> weather instruments is encouraged to bring your ideas to the
> list. Further
> kit development and/or revisions to the T-238 will depend
> upon you, the
> user. TAPR will continue supporting development and kits if
> the interest
> and demand are there. Let us know your thoughts via the WXSIG list.
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>
>
>
> ---
> You are currently subscribed to wxsig as:
> jack.smith1@usarc-emh2.army.mil
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
 << File: ATT00000.html >>

68. [wxsig] wxsig digest: August 19, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:35 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120555-2000.11.20-13.01.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Saturday, August 19, 2000.

1. Re: ESD and WS-1/T238
2. Re: ESD and WS-1/T238
3. Ferrites
4. Version 1.10
5. RE: Version 1.10

Subject: Re: ESD and WS-1/T238
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>

Date: Sat, 19 Aug 2000 07:21:06 -0500
X-Message-Number: 1

"Ehler, Kyle" wrote:
>
> I'm trying this in non-MIME format. . .to limit msg bulk.

Thank you

I really prefer to NOT get HTML-encoded/MIME-encoded messages, for a
variety of security reasons. I'm paid to be paranoid at work. It
carries over to the house, too!

Again, thanks for NOT encoding the message!

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on
Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

Subject: Re: ESD and WS-1/T238
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Sat, 19 Aug 2000 07:30:18 -0500
X-Message-Number: 2

"Ehler, Kyle" wrote:
>
...
> The problem is, there has not been an agreement regarding the enclosure for
> the completed rig.
> If there was a standardized enclosure, then testing this would have some
> level of reproducibility and fixes.
> ESD is a finicky critter. It likes to find odd paths to ground. The
> T238/Wx combo has no earth ground (and possibly should not) since it is
> powered by any number of methods (wall-warts, batteries, etc.).
>
> Our lab is accustomed to testing products with cordage intended for earth
> grounding which provides a drainage path for RF, AC leakage current and ESD.
> We have zero experience with ungrounded devices so this could be very
> educating.

In general, non-sinked devices are somewhat more immune to ESD than
those sunk to earth-ground, in my experience. We tested an intravenous
infusion pump destructively for ESD susceptibility. The one tested
while powered by 28vDC and well grounded failed considerably earlier and
much more interestingly than the second test run under isolated battery
power.

> As far as ferrites (prayer beads as we call them around here) it is best to
> locate them as near the source of the impulse as possible, but these are
> more for RFI control than ESD. The best way to stop ESD is to provide local
> grounded structures like cases and bezels to shunt the energy around and
> away from the device. Once (if) it gets in, it is just bad.

My experience with ferrite beads is similar to Kyle's. Ferrite is not a
viable method of protecting against high potential impulse noise or
damage. It's great for loading power lines and changing their
characteristic impedence, unbalancing them and making them less likely
to act as antennas. As far as impule susceptibility goes, they might as
well not be there. FWIW, I asked this question while we were building
the IV pumps for a Spacelab mission in 1992 (STS-48/Spacelab-J: Fluid
Therapy System). Imed Corp. were unsure. They asked their testing
house, and the testing house gave us the skinny. When I was talking to
our NASA/Johnson Space Center EMI/EMC guy, he just snorted and informed
me of the real facts, in somewhat condescending detail, of using ferrite
to attempt to suppress ESD/EMP. The kind form of his lecture was that,
perhaps making a case out of ferrite beads, suitably crushed and
reformed, might help, but he figured it'd just make a heavier case with
no real ESD benefit.

73, gerry n5jxs
--
Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
Network Engineering |Research focusing on

Computer Science Department |Satellite Geodesy and
Texas A&M University |Geodetic Control
979.458.4020 (Phone) -- 979.847.8578 (Fax)

Subject: Ferrites
From: William Beals <will@beals5.com>
Date: Sat, 19 Aug 2000 15:56:22 -0600
X-Message-Number: 3

Folks:

The main reason I wanted ferrites wasn't for ESD, it was mainly to keep RF
out of the internals once the board was inside a case. I never thought
about them being useful for ESD and it sounds like I shouldn't either!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Version 1.10
From: Doug <dbuhrman@radiks.net>
Date: Sat, 19 Aug 2000 22:32:35 -0600
X-Message-Number: 4

Will:
I just downloaded ver 1.10 into my board and also have the 1994 iButton can hooked up. All seems
to work fine. Some questions:
1) The Rain counter has a number even though I don't have a rain gauge connected. I even went
through the setup to show it didn't exist but everytime I power-up it seems to jam either the number
15 or 47 in there.
2) What do you mean by a "full download " to get into debug? I would like to know more about this
debug mode.
3) I built a surface mount version of the T238 and seems to a number of tries to get the development
software to recognize it. I wouldn't think there would be anything different between the SMT and
the DIP version of the chip. Any quick thoughts?

Thanks

Doug K0DSP

Subject: RE: Version 1.10
From: William Beals <will@beals5.com>
Date: Sat, 19 Aug 2000 22:06:57 -0600
X-Message-Number: 5

Doug:

Thanks for the good news. In answer to your questions:

1) The rain counter itself will always have a count as the counter in the
rain guage has a battery in it and the counter can't get reset. Can you
tell me which counters you are talking about. If you power up without a
rain guage plugged in, I should show all 0's or dashes depending. If not,
I have some work to do

2) A "full download" is where you use the Motorola development tools to
erase ALL the flash (including your settings) and program the micro with
not only a new application but also the latest-and-greatest monitor
program. The monitor program doesn't change much and shouldn't be
necessary to change at all unless I have a major change to the system. The
change I made on 1.10 was to prevent some display problems when you get
into the monitor. The problems could be avoided by simply cycling power.

3) I would hope that the SMT and DIP versions of the micro should be the same. Make sure the diode used for serial communications is a schotkey diode. If it isn't communications could be problematic. Also, make sure you understand the strange security system the 6808 uses for debug mode. I've slowly gotten comfortable with it, but it seems to get in the way quite a bit. Also make sure that you are providing a clean +9V to the micro to get into debugmode. Simply powering up both the MAX232 and CPU simultaneously does NOT work reliably. Power to the MAX232 must come up before the CPU to allow the MAX chip to get up to +9V before the CPU comes out of reset. I solved this by always powering the MAX chip and having the "reset" button only cycle power to the CPU.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Saturday, August 19, 2000 10:33 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Version 1.10

Will:
I just downloaded ver 1.10 into my board and also have the 1994 iButton can hooked up. All seems
to work fine. Some questions:
1) The Rain counter has a number even though I don't have a rain gauge connected. I even went
through the setup to show it didn't exist but everytime I power-up it seems to jam either the number
15 or 47 in there.
2) What do you mean by a "full download " to get into debug? I would like to know more about this
debug mode.
3) I built a surface mount version of the T238 and seems to a number of tries to get the development
software to recognize it. I wouldn't think there would be anything different between the SMT and
the DIP version of the chip. Any quick thoughts?

Thanks

Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

69. [wxsig] wxsig digest: August 29, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:40 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120554-2000.11.20-13.01.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Tuesday, August 29, 2000.

1. T238
2. RE: T238
3. RE: T238

Subject: T238
From: "john e mclemore" <turkey2@frontiernet.net>
Date: Tue, 29 Aug 2000 20:49:36
X-Message-Number: 1

HI, WATCHING YOUR PROBLEMS WITH THIS UNIT,IS THIS "SINGLE WIRE "SYSTEM SHIELDED? AM STATIONS,STATIC AND TWO-WAY CAN REALLY MESS THINGS UP.
YOU MUST TERMINATE EACH INPUT TO CLEAR "GHOST READINGS" WILL THE T238 ACT AS A RS232 TO CLOSURE FOR CONTROLING "THINGS BY RS232"? OR IS IT JUST A remote system for reading external "things(voltage)"? ok have been looking at various remote to rs232 for aprs..most too expencive...73,john,wilcox co's only ham...

Subject: RE: T238
From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 29 Aug 2000 23:10:57 -0400
X-Message-Number: 2

> -----Original Message-----
> From: john e mclemore
> Sent: Tuesday, August 29, 2000 8:50 PM
>
> HI, WATCHING YOUR PROBLEMS WITH THIS UNIT,IS THIS "SINGLE WIRE "SYSTEM
> SHIELDED? AM STATIONS,STATIC AND TWO-WAY CAN REALLY MESS THINGS UP.
> YOU MUST TERMINATE EACH INPUT TO CLEAR "GHOST READINGS" WILL
> THE T238 ACT AS A RS232 TO CLOSURE FOR CONTROLING "THINGS BY RS232"?
> OR IS IT JUST A remote system for reading external "things(voltage)"?
ok
> have been looking at various remote to rs232 for aprs..most too
expencive
> ...73,john,wilcox co's only ham...

  WHOA!!! so far the only persistent problem that has occured to more
than one person is really a TNC problem. I am not sure exactly how many
units we have running 24/7 but my T-238 has been running just fine with
no problems for MONTHS without being reset. I am in a fairly nasty
situation in that it is in the midst of RF and some real interesting RFI
raised by a mixed bag of DC/AC inverters and living at 1600 feet on the
wall of a valley that is locally legendary for summer T-storms. This
"One-Wire" system is digital and is fairly immune to most fo what you
say. Many of the 'problems' you may have seen were hypotheical, guys
trying to anticipate where we might have problomes, but most have them
have yet to materialize.

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

Subject: RE: T238
From: William Beals <will@beals5.com>
Date: Tue, 29 Aug 2000 21:48:14 -0600
X-Message-Number: 3

John:

The cables to the sensor are not shielded. For the most part they are
twisted pair wires which while not near as good as shielding, should
protect us against the nastier issues. All of the data from the sensors
are sent digitally with CRCs on the data to ensure errors are detected
before any bad data get reported. I still have a few holes that let an
occasional (once/month or so) bad set of data out that needs chasing. Not
sure where some ghost readings could get in, but am open to suggestions.

For now the problems we're discussing are I think mostly TNC issues, not
T238 issues. This is unless we are the ones introducing the nasties into
the TNC, but it sounds like the PK232MBX had these problems long before the
T238 came along.

will

-----Original Message-----
From: john e mclemore [SMTP:turkey2@frontiernet.net]
Sent: Tuesday, August 29, 2000 2:50 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] T238

HI, WATCHING YOUR PROBLEMS WITH THIS UNIT,IS THIS "SINGLE WIRE "SYSTEM
SHIELDED? AM STATIONS,STATIC AND TWO-WAY CAN REALLY MESS THINGS UP.
YOU MUST TERMINATE EACH INPUT TO CLEAR "GHOST READINGS" WILL THE T238 ACT
AS A RS232 TO CLOSURE FOR CONTROLING "THINGS BY RS232"? OR IS IT JUST A
remote system for reading external "things(voltage)"? ok have been looking
at various remote to rs232 for aprs..most too expencive...73,john,wilcox

co's only ham...

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

70. [wxsig] wxsig digest: August 02, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:26 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120556-2000.11.20-13.01.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Wednesday, August 02, 2000.

1. Firmware Upgrade for T238 OK
2. Hot 7805
3. Re: Hot 7805
4. RE: Hot 7805
5. RE: Hot 7805

Subject: Firmware Upgrade for T238 OK
From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 2 Aug 2000 22:34:19 -0500
X-Message-Number: 1

Will, got the firmware updated to 1.09.1R. The serial port on my IBM laptop
wasn't working to well in DOS mode and that was causing my problem.
Applying the update from my PC worked fine and went as described on your web
page. I also had to run in DOS mode, even on my PIII 600.

Thanks for the new option to update my positional data and options for
English/Metric on the temp.

Subject: Hot 7805
From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Wed, 2 Aug 2000 22:35:51 -0500
X-Message-Number: 2

My 7805 is getting very hot when the backlight is plugged in. Is anyone
else experiencing the same thing?

Subject: Re: Hot 7805
From: "Russ Chadwick" <crb5@uswest.net>
Date: Wed, 2 Aug 2000 22:12:19 -0600
X-Message-Number: 3

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>

> My 7805 is getting very hot when the backlight is plugged in. Is anyone
> else experiencing the same thing?
>
 The same thing happens with mine. I did install a dropping resistor (47
ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
across the regulator. I generally don't leave the backlight on for long
periods. However, I have inadvertently left it on overnight without a
meltdown.

Russ
kb0tvj

Subject: RE: Hot 7805
From: William Beals <will@beals5.com>
Date: Wed, 2 Aug 2000 22:18:48 -0600
X-Message-Number: 4

Rich:

Cool on the update finally working. As best I can tell, that app will only
work reliably in pure DOS mode. I had hoped to have someone write a
windows-based program for me, but the volunteer pulled himself from the
running. When the main code gets stable, maybe I will jump into writing a
windows program. It isn't high on my fun list right now though.

Yes, that regulator does get hot! My "+12V" wall-wart puts out about 14V,
even under load, so it does get toasty. As an experiment I have let it run
that way for weeks and weeks and nothing appears unstable, it does not go
into thermal shutdown or anything dramatic like that.

will

-----Original Message-----
From: Rich Beckwith [SMTP:wn0x@earthlink.net]
Sent: Wednesday, August 02, 2000 9:36 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Hot 7805

My 7805 is getting very hot when the backlight is plugged in. Is anyone
else experiencing the same thing?

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

71. [wxsig] wxsig digest: August 17, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:32 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120557-2000.11.20-13.01.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Thursday, August 17, 2000.

1. RE: LCD Availibility
2. RE: LCD availability
3. Re: LCD Availibility
4. Re: LCD Availibility
5. Re: LCD Availibility
6. RE: LCD availability

Subject: RE: LCD Availibility
From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Thu, 17 Aug 2000 08:30:23 -0400
X-Message-Number: 1

Bill,

Have you tried Digi-Key? http://www.digikey.com

What I like best about their web site is that they list how many they have
in stock.

 - Steve, N7HPR
   n7hpr@tapr.org

> -----Original Message-----
> From: bounce-wxsig-15059@lists.tapr.org
> [mailto:bounce-wxsig-15059@lists.tapr.org]On Behalf Of Bill Ellis
> Sent: Wednesday, August 16, 2000 11:08 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] LCD Availibility
>
>
> Good News, I got my hard wired T238 working at first power-up. (I think)
> As I am using a 1 x 20 display instead of a 4 x 20 display and the
> messages are broken up due to this but it seems to be working.
>
> Bad News, As of Aug. 16 The 4 x 20 LCD Seiko L234B1J000 Mouser stock #
> 628-L2034B1J are not in stock. I was told there was a world-wide
> shortage of driver chips and Mouser will not take any more orders.
>

> I found an equivalent display from AND. The AND 721GST Newark P/N 914661
> However Newark is out of stock and has a delivery date to them of Sept.
> 25. (I would guess this may slip) So it seems the displays are very hard
> to find. "son of T238" or "T-238 lite" may have to use a different
> display platform.... Anyone know where to purchase one of these
> displays?
> Delbert N5ZTW
>
> ---
> You are currently subscribed to wxsig as: srbible@gate.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: RE: LCD availability
From: "Ehler, Kyle" <kehler@lsil.com>
Date: Thu, 17 Aug 2000 08:17:52 -0500
X-Message-Number: 2

This message is in MIME format. Since your mail reader does not understand
this format, some or all of this message may not be legible.

------_=_NextPart_001_01C0084D.8E1EA190
Content-Type: text/plain;
        charset="iso-8859-1"

Y'all are gonna freak when I say this, but a year ago I watched at least 50
Orion P20011 4X20 LCD's go in the recycling bin. I culled 3 from the heap
before they went. They already have the header, so no soldering and they
have the LED backlight, but hardwired within the module (no external BL
wiring needed). They even have a nice softwired harness that terminates in
a 2X10 connector. Dunno if the pinout is right for the '238's header (I
used the ribbon from the kit). These work great!
The two LCD's that came with my '238 kits have not been out of the packages.
In view of the shortage, I'm reluctant to part with them. I could part with
two displays, but the quandary is which to keep. I'm thinking it might be
advantageous to be able to switch off the display to reduce power
consumption and extend the life of the backlight. I don't have the specs
for the Orion part, but I surmise that cutting a trace would allow external
(switched) power to the backlight. What can I say? Ima pig with my parts
(just ask my SO).

What say you?

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>

------_=_NextPart_001_01C0084D.8E1EA190
Content-Type: text/html;
        charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
<HTML>
<HEAD>
<META HTTP-EQUIV=3D"Content-Type" CONTENT=3D"text/html; =
charset=3Diso-8859-1">
<META NAME=3D"Generator" CONTENT=3D"MS Exchange Server version =
5.5.2650.12">
<TITLE>RE: LCD availability</TITLE>
</HEAD>
<BODY>

<P><FONT SIZE=3D2 FACE=3D"Arial">Y'all are gonna freak when I say this, =
but a year ago I watched at least 50 Orion P20011 4X20 LCD's go in the =
recycling bin. I culled 3 from the heap before they went. =
They already have the header, so no soldering and they have the LED =
backlight, but hardwired within the module (no external BL wiring =
needed). They even have a nice softwired harness that terminates =
in a 2X10 connector. Dunno if the pinout is right for the '238's =
header (I used the ribbon from the kit). These work =
great!</FONT></P>

<P><FONT SIZE=3D2 FACE=3D"Arial">The two LCD's that came with my '238 =
kits have not been out of the packages.</FONT>

<FONT SIZE=3D2 FACE=3D"Arial">In view of the shortage, I'm =
reluctant to part with them. I could part with two displays, but =
the quandary is which to keep. I'm thinking it might be =
advantageous to be able to switch off the display to reduce power =
consumption and extend the life of the backlight. I don't have =
the specs for the Orion part, but I surmise that cutting a trace would =
allow external (switched) power to the backlight. What can I =
say? Ima pig with my parts (just ask my SO).</FONT></P>

<P><FONT SIZE=3D2 FACE=3D"Arial">What say you?</FONT>
</P>

<P><FONT SIZE=3D5 FACE=3D"ZapfChancery">Kyle Ehler</FONT> <FONT =
SIZE=3D5 FACE=3D"Book Antiqua"></FONT> <A =
HREF=3D"mailto:kyle.ehler@lsil.com"><U><FONT COLOR=3D"#0000FF" SIZE=3D2 =
FACE=3D"Arial">kyle.ehler@lsil.com</FONT></U></A><FONT SIZE=3D2 =
FACE=3D"Book Antiqua"> </FONT>
</P>

</BODY>
</HTML>
------_=_NextPart_001_01C0084D.8E1EA190--

Subject: Re: LCD Availibility
From: Doug <dbuhrman@radiks.net>
Date: Thu, 17 Aug 2000 18:43:13 -0600
X-Message-Number: 3

Bill Ellis wrote:

> Good News, I got my hard wired T238 working at first power-up. (I think)
> As I am using a 1 x 20 display instead of a 4 x 20 display and the
> messages are broken up due to this but it seems to be working.
>
> Bad News, As of Aug. 16 The 4 x 20 LCD Seiko L234B1J000 Mouser stock #
> 628-L2034B1J are not in stock. I was told there was a world-wide
> shortage of driver chips and Mouser will not take any more orders.
>
> I found an equivalent display from AND. The AND 721GST Newark P/N 914661
> However Newark is out of stock and has a delivery date to them of Sept.
> 25. (I would guess this may slip) So it seems the displays are very hard
> to find. "son of T238" or "T-238 lite" may have to use a different
> display platform.... Anyone know where to purchase one of these
> displays?
> Delbert N5ZTW
>
> ---
> You are currently subscribed to wxsig as: dbuhrman@radiks.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

Bill: Have you tried Marlin P. Jones in FL? I bought some 20x4 LCD units that work great on the
T238 for $7 each. I had to remove the connector as it was too short. Thought I would let you know.

Doug K0DSP

Subject: Re: LCD Availibility
From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 17 Aug 2000 21:43:25 -0400
X-Message-Number: 4

Doug what is the part number from MP Jones ... ???

> -----Original Message-----
> From: Doug
> Sent: Thursday, August 17, 2000 8:43 PM
>
> Bill: Have you tried Marlin P. Jones in FL? I bought some
> 20x4 LCD units that work great on the
> T238 for $7 each. I had to remove the connector as it was
> too short. Thought I would let you know.
>

> Doug K0DSP
>

Subject: Re: LCD Availibility
From: Doug <dbuhrman@radiks.net>
Date: Thu, 17 Aug 2000 21:16:06 -0600
X-Message-Number: 5

"Brian B. Riley" wrote:

> Doug what is the part number from MP Jones ... ???
>
> > -----Original Message-----
> > From: Doug
> > Sent: Thursday, August 17, 2000 8:43 PM
> >
> > Bill: Have you tried Marlin P. Jones in FL? I bought some
> > 20x4 LCD units that work great on the
> > T238 for $7 each. I had to remove the connector as it was
> > too short. Thought I would let you know.
> >
> > Doug K0DSP
> >
>
> ---
> You are currently subscribed to wxsig as: dbuhrman@radiks.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

OOOPPPPS! I have egg on my face on this one! I purchased the 20x4 LCD from All Electronics, part #LCD-46. 800-826-5432 or http://allelectronics.com. Sorry to lead everyone astray.

Doug K0DSP

Subject: RE: LCD availability
From: William Beals <will@beals5.com>
Date: Thu, 17 Aug 2000 21:35:13 -0600
X-Message-Number: 6

Kyle:

I covet displays too. I acquired a bunch of displays a while back, but alas they are not good for this project. Usually the backlight module is pretty seperate from the LCD electronics board, so finding the trace or wire to cut should be pretty easy and not too hazardous.

will

-----Original Message-----
From: Ehler, Kyle [SMTP:kehler@lsil.com]
Sent: Thursday, August 17, 2000 7:18 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: LCD availability

Y'all are gonna freak when I say this, but a year ago I watched at least 50 Orion P20011 4X20 LCD's go in the recycling bin. I culled 3 from the heap before they went. They already have the header, so no soldering and they have the LED backlight, but hardwired within the module (no external BL wiring needed). They even have a nice softwired harness that terminates in a 2X10 connector. Dunno if the pinout is right for the '238's header (I used the ribbon from the kit). These work great!
The two LCD's that came with my '238 kits have not been out of the packages.
In view of the shortage, I'm reluctant to part with them. I could part with
two displays, but the quandary is which to keep. I'm thinking it might be advantageous to be able to switch off the display to reduce power consumption and extend the life of the backlight. I don't have the specs for the Orion part, but I surmise that cutting a trace would allow external (switched) power to the backlight. What can I say? Ima pig with my parts (just ask my SO).

What say you?

Kyle Ehler kyle.ehler@lsil.com <mailto:kyle.ehler@lsil.com>

<< File: ATT00001.html >>

72. [wxsig] wxsig digest: August 09, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:31 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120558-2000.11.20-13.01.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Wednesday, August 09, 2000.

1. Reducing List Bandwidth
2. Re: 1994/MX614 support
3. Re: 1994/MX614 support

Subject: Reducing List Bandwidth
From: "Bill Hosking" <billh@inficad.com>
Date: Wed, 9 Aug 2000 9:22:25
X-Message-Number: 1

A brief thought on reducing list bandwidth(or clutter).
I'm one of those who prints the list digest, grabs my morning coffee, and
reads on (through a fair amount of clutter).

In one of the last digests there were several messages that went on for at
least 4 printed pages each, where the originator's comments were only 3-4
lines! The rest was repeated earlier messages.

Just for the heck of it, I timed myself. I snipped four+ pages of message
text in about 25 seconds.

Join 'clutter snippers anonymous' (anonymously of course) and help snip out
clutter.

:-)

73, Bill, W7JSW
{recently joined the 'working T238 board' club}

Subject: Re: 1994/MX614 support
From: Doug <dbuhrman@radiks.net>
Date: Wed, 09 Aug 2000 21:10:43 -0600
X-Message-Number: 2

I agree that getting the 1-wire wx support stable is the top priority. I'm glad you are toying with the idea of looking at the MX614. On the Ver 10 release, I went onto your website to download the zip file and I keep getting an error that it can't find it on the server. Any ideas?
Doug K0DSP

Subject: Re: 1994/MX614 support
From: William Beals <will@beals5.com>
Date: Wed, 9 Aug 2000 22:42:36 -0600
X-Message-Number: 3

Doug:

Oops, got caught on a case sensitivity problem with the server that didn't exist on my home machine.
Thanks for the catch. Fixed now.

will

-----Original Message-----
From: Doug [SMTP:dbuhrman@radiks.net]
Sent: Wednesday, August 09, 2000 9:11 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1994/MX614 support

I agree that getting the 1-wire wx support stable is the top priority. I'm glad you are toying with the idea of looking at the MX614. On the Ver 10 release, I went onto your website to download the zip file and I keep getting an error that it can't find it on the server. Any ideas?
Doug K0DSP

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

73. [wxsig] wxsig digest: August 07, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:29 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120559-2000.11.20-13.02.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Monday, August 07, 2000.

1. For Sale - One Wire Weather station
2. Re: 1.10.0 Release
3. Re: For Sale - One Wire Weather station
4. Re: Hot 7805
5. Re: Hot 7805
6. Temp Shield
7. RE: Temp Shield
8. Re: Temp Shield
9. RE: Temp Shield
10. Re: nothing-but-dots Matrix Display
11. 1994 connections, micros, etc
12. Re: nothing-but-dots Matrix Display
13. RE: 1994 connections, micros, etc

Subject: For Sale - One Wire Weather station
From: "Chuck Gooden" <chgooden@worldnet.att.net>
Date: Mon, 7 Aug 2000 01:08:58 -0500
X-Message-Number: 1

I have a one wire weather station for sale. This is the basic one wire kit consisting of temperature, wind speed and direction. At present the kit is unassembled.

I have slightly modified the kit by gluing a sensor from a bicycle computer into the housing. The idea was to provide a means to obtain the average and max wind speeds without a PC. Please note this is only a mehanical modification only and no holes were made in the housing.

The first person to reply to this email and send me a check for $80.00 will get the one wire weather station and bicycle computer.

Chuck Gooden N9QBT
Rockford, IL

Subject: Re: 1.10.0 Release
From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Mon, 7 Aug 2000 06:39:41 -0400
X-Message-Number: 2

Damn!!

Just as I had worked out how to upgrade and did it he goes and brings out another version. Oh well.

I am ordering another temp button and the DS1994 but I'm confused as to how to connect them to the bus. do I simply solder a wire on the top and bottom of the button and connect it to the bus?

Mark, G7LTT (sorry if I seem to be consuming the list)

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Sunday, August 06, 2000 11:14 PM
Subject: [wxsig] 1.10.0 Release

> Folks:
>
> Release 1.10.0 is now up. Russ found a good bug in it before I released
> it, saving me some embarassment. Major features are:
>
> 1) T238 can now read time from a DS1994 real-time clock.
> 2) Found and fixed a hole in the wind sensing routines that gave bad data.
> 3) Now the LCD should come up OK in debug mode (need **full** download to
> get this feature).
> 4) Now handle removal of rain guage (for winter) more gracefully.
>
> Note: To use the DS1994, you must set the time using your PC. When you
> do, you must set the DS1994 to GMT, not local time. After "booting up"
> with the DS1994 for the first time, re-run the time-set routines to enter
> the correct local time. After that I store the correct offset and you
> should never have to re-enter the time again.
>
> Also, starting with 1.10.0, I have moved the LCD version string to the
> "Display Current Data" menu page instead of after you start displaying
> data. Hopefully this is more convenient to find.
>
> will
>
> --
> This message sent using 100% recycled Electrons
> (Minimum 30% post-consumer content)
> --
> Will Beals
> will@beals5.com
> 15014 East Idaho Place
> Aurora, CO 80012-4740
> 303-755-0293
>
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: Re: For Sale - One Wire Weather station
From: "Byron Lichtenwalner" <w3wkr@ptd.net>
Date: Mon, 7 Aug 2000 10:24:20 -0400
X-Message-Number: 3

Chuck
I will buy your 1 wire weather station.
Respond to me at w3wkr@ptd.net
Byron

Subject: Re: Hot 7805
From: Anson Mount <amount@execpc.com>
Date: Mon, 07 Aug 2000 10:16:32 -0500
X-Message-Number: 4

Excellent idea...that is how the Kantronics KAM's 7805 is cooled...its attached
right to the box.

Anson / N9RJX

Gerry Creager N5JXS wrote:

> Russ Chadwick wrote:
> >
> > ----- Original Message -----
> > From: Rich Beckwith <wn0x@earthlink.net>
> >
> > > My 7805 is getting very hot when the backlight is plugged in. Is anyone
> > > else experiencing the same thing?
> > >

> > The same thing happens with mine. I did install a dropping resistor (47
> > ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
> > across the regulator. I generally don't leave the backlight on for long
> > periods. However, I have inadvertently left it on overnight without a
> > meltdown.
>
> Forgive me since I've not got the kit (and it sounds like there won't be
> any available)... how is the 7805 heat-sunk? If there's not a heat-sink
> on it, even a little clip-on makes a good addition to get things cooler:
> the thermal mass for dissipation on those regulators is certainly
> lacking. If there's a metal structure (box, etc) that it can be
> attached to, that'd help. I've fried several 7805's that were
> theoretically within dissipation limits until I started adding extra
> heat-sink thermal mass.
>
> Hope I'm not too far off in left field!
>
> 73, gerry
> ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
> They're real close together and one's more a test site, but they'll be
> up.
> --
> Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
> Network Engineering |Research focusing on
> Computer Science Department |Satellite Geodesy and
> Texas A&M University |Geodetic Control
> 979.458.4020 (Phone) -- 979.847.8578 (Fax)
>
> ---
> You are currently subscribed to wxsig as: amount@execpc.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---

Subject: Re: Hot 7805
From: Mark Phillips <Mark.Phillips@royalblue.com>
Date: Mon, 7 Aug 2000 11:25:39 -0400
X-Message-Number: 5

So I'm kinda getting the idea that the light is the only thing that needs
the 5v feed from J2. Would this be correct? If so I'll install a switch on
mine as I sometimes have guests sleeping in the room where all the stuff is
and the light would be a pain.

Mark

-----Original Message-----
From: bounce-wxsig-19302@lists.tapr.org
[mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Anson Mount
Sent: Monday, August 07, 2000 11:17 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Hot 7805

Excellent idea...that is how the Kantronics KAM's 7805 is cooled...its
attached
right to the box.

Anson / N9RJX

Gerry Creager N5JXS wrote:

> Russ Chadwick wrote:
> >
> > ----- Original Message -----
> > From: Rich Beckwith <wn0x@earthlink.net>
> >
> > > My 7805 is getting very hot when the backlight is plugged in. Is
anyone
> > > else experiencing the same thing?
> > >
> > The same thing happens with mine. I did install a dropping resistor
(47
> > ohms) in the lead from the 13.8 VDC power supply to reduce the voltage
> > across the regulator. I generally don't leave the backlight on for long
> > periods. However, I have inadvertently left it on overnight without a
> > meltdown.
>

> Forgive me since I've not got the kit (and it sounds like there won't be
> any available)... how is the 7805 heat-sunk? If there's not a heat-sink
> on it, even a little clip-on makes a good addition to get things cooler:
> the thermal mass for dissipation on those regulators is certainly
> lacking. If there's a metal structure (box, etc) that it can be
> attached to, that'd help. I've fried several 7805's that were
> theoretically within dissipation limits until I started adding extra
> heat-sink thermal mass.
>
> Hope I'm not too far off in left field!
>
> 73, gerry
> ps: Russ, we're approved for SuomiNet and I'll have 2 sites here.
> They're real close together and one's more a test site, but they'll be
> up.
> --
> Gerry Creager   gerry@cs.tamu.edu, gerry@page4.cs.tamu.edu
> Network Engineering |Research focusing on
> Computer Science Department |Satellite Geodesy and
> Texas A&M University |Geodetic Control
> 979.458.4020 (Phone) -- 979.847.8578 (Fax)
>
> ---
> You are currently subscribed to wxsig as: amount@execpc.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: g7ltt@g7ltt.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

****
This message is intended only for the stated addressee(s) and may
be confidential. Access to this email by anyone else is unauthorised.
Any opinions expressed in this email do not necessarily reflect the
opinions of royalblue. Any unauthorised disclosure, use or
dissemination, either whole or in part is prohibited. If you are
not the intended recipient of this message, please notify the sender
immediately.
****

Subject: Temp Shield
From: Doug <dbuhrman@radiks.net>
Date: Mon, 07 Aug 2000 12:33:32 -0600
X-Message-Number: 6

I found the following materials at the local hardware store and had a shield for my temp sensor
built in less than an hour. I used a 3 inch vent cover for a gas water heater fits (a bit loose)
around a 2.5 inch to .75 inch PVC reducer. I happened to have some adhesive backed foam strips
that I attached to the outside wall of the PVC reducer. That made the vent cover fit very snug on
the PVC reducer. The reducer now threads on to a piece of .75 inch pipe. The temp sensor sits on
top of the .75 inch pipe up inside the vent cover. Out of the sun and rain and plenty of air flow.
Hope this description made some sense.

Doug K0DSP

Subject: RE: Temp Shield
From: Mark Phillips <Mark.Phillips@royalblue.com>
Date: Mon, 7 Aug 2000 14:39:07 -0400
X-Message-Number: 7

Got a camera? MAybe you could do a web page with the design?

Mark

-----Original Message-----
From: bounce-wxsig-19302@lists.tapr.org
[mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Doug
Sent: Monday, August 07, 2000 2:34 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Temp Shield

I found the following materials at the local hardware store and had a shield
for my temp sensor
built in less than an hour. I used a 3 inch vent cover for a gas water
heater fits (a bit loose)
around a 2.5 inch to .75 inch PVC reducer. I happened to have some
adhesive backed foam strips
that I attached to the outside wall of the PVC reducer. That made the vent
cover fit very snug on
the PVC reducer. The reducer now threads on to a piece of .75 inch pipe.
The temp sensor sits on
top of the .75 inch pipe up inside the vent cover. Out of the sun and rain
and plenty of air flow.
Hope this description made some sense.

Doug K0DSP

You are currently subscribed to wxsig as: g7ltt@g7ltt.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

****
This message is intended only for the stated addressee(s) and may
be confidential. Access to this email by anyone else is unauthorised.
Any opinions expressed in this email do not necessarily reflect the
opinions of royalblue. Any unauthorised disclosure, use or
dissemination, either whole or in part is prohibited. If you are
not the intended recipient of this message, please notify the sender
immediately.
****

Subject: Re: Temp Shield
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Mon, 07 Aug 2000 13:53:43 -0500
X-Message-Number: 8

Have a picture?

>>> dbuhrman@radiks.net 08/07/00 01:33PM >>>
I found the following materials at the local hardware store and had a =
shield for my temp sensor
built in less than an hour. I used a 3 inch vent cover for a gas water =
heater fits (a bit loose)
around a 2.5 inch to .75 inch PVC reducer. I happened to have some =
adhesive backed foam strips
that I attached to the outside wall of the PVC reducer. That made the =
vent cover fit very snug on
the PVC reducer. The reducer now threads on to a piece of .75 inch pipe. =
The temp sensor sits on
top of the .75 inch pipe up inside the vent cover. Out of the sun and =
rain and plenty of air flow.
Hope this description made some sense.

Doug K0DSP

You are currently subscribed to wxsig as: rich@dps.state.mo.us=20
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org=20

Subject: RE: Temp Shield
From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Mon, 7 Aug 2000 15:53:12 -0400
X-Message-Number: 9

Or email me the picture and I will add it to the stuff I already have
posted re: the T-238 at <http://www.wulfden.org> and follow the ham
radio link.

 73 de brian

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
<n1bq@amsat.org>

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Mark Phillips
> Sent: Monday, August 07, 2000 2:39 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: Temp Shield
>
>
> Got a camera? MAybe you could do a web page with the design?
>
> Mark
>
> -----Original Message-----
> From: bounce-wxsig-19302@lists.tapr.org
> [mailto:bounce-wxsig-19302@lists.tapr.org]On Behalf Of Doug
> Sent: Monday, August 07, 2000 2:34 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Temp Shield
>
>
> I found the following materials at the local hardware store
> and had a shield
> for my temp sensor
> built in less than an hour. I used a 3 inch vent cover for a
> gas water
> heater fits (a bit loose)
> around a 2.5 inch to .75 inch PVC reducer. I happened to have some
> adhesive backed foam strips
> that I attached to the outside wall of the PVC reducer. That
> made the vent
> cover fit very snug on
> the PVC reducer. The reducer now threads on to a piece of
> .75 inch pipe.
> The temp sensor sits on
> top of the .75 inch pipe up inside the vent cover. Out of
> the sun and rain
> and plenty of air flow.
> Hope this description made some sense.
>
> Doug K0DSP
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
>
> **
> *****************
> This message is intended only for the stated addressee(s) and may
> be confidential. Access to this email by anyone else is unauthorised.
> Any opinions expressed in this email do not necessarily reflect the
> opinions of royalblue. Any unauthorised disclosure, use or
> dissemination, either whole or in part is prohibited. If you are
> not the intended recipient of this message, please notify the sender
> immediately.
> **
> *****************
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: Re: nothing-but-dots Matrix Display

From: "james johnson" <wa6ozj@earthlink.net>
Date: Mon, 7 Aug 2000 20:11:47
X-Message-Number: 10

Will,

Thanks for the support...it worked! Turns out it was a combination of problems. 1)I had one cold solder joint in one of the display data lines, and 2)I did have the contrast set wrong. Both now fixed, and it all works fine. I did notice the regulator heat sink does get quite warm...I recall someone else commenting on that too. I haven't had a chance to run it for any length of time, so don't know if the reg heating is normal, dangerous, or just the way things are.

Also, I saw the notice that Dallas had run out of senors...to bad. It would be nice if they could had gone on a while longer, as I have some other folks interested too...oh well.

Thanks again for the help and the speedy response!

73, Jim

Subject: 1994 connections, micros, etc
From: William Beals <will@beals5.com>
Date: Mon, 7 Aug 2000 21:04:23 -0600
X-Message-Number: 11

Folks:

All: Ugh! I need to learn that not everyone has been in on the long history of this project and I need to be more complete when I describe things.

All: When I say the code is released, that means I put it on the website http://www.beals5.com/wx. I need to also update the operations manual every time I release code and I have NOT done this yet for the 1.10.0 release. If nothing else, I'm getting more incentive to make fewer releases, it is a lot of work getting all this stuff updated in a coordinated manner.

All: To connect the DS1994s to the T238 you will need the "blue dot" i-button reader. You can get it either by itself or you can get a package deal that has a DS1994, reader, and another DS9097U serial port adapter all as one package. To attach the reader to the T238 and your weather station, I use a regular telephone Y adapter. The only tricky part is that it is a very tight fit to get both the Y adapter and the power jack plugged in at the same time.

Brian/Mark: To program a micro from scratch is pretty. You already have a T238 board so you can program a fresh micro in that board then just transfer it to your home brew board. To program a fresh micro you will need to download the Motorola toolset from P&E microsystems. I have a link to them on the wx website under links. Once you get the tools up and running, just invoke the programmer tool, point to the latest S19 file from the website and tell it to program the device. I'm leaving a few steps out, but am hoping they are pretty self-explanitory. Don't forget, when you reprogram from scratch you lose your IDs. In the file WIREIDS.ASM are the instructions on where to find those IDs and save them for the future.

Mark: Updates are optional! You don't have to do it! The pace will slow down, but for now a release per month is entirely likely. Only bother upgrading if the new features are worthwhile. Remember, once you have done the calibration process, you will not lose your sensor IDs when you install new software using the monitor program. Only using the Motorola tools will result in lost IDs--that's Brians problem.

Mark: Yes, the header J8 supplies power to only the backlight. It needs to be current limited (R13), so it is not for the display electronics at all. Except for making sure there were no functional problems, I have left the backlight off. Probably why it didn't get enough attention during the Beta test.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Re: nothing-but-dots Matrix Display
From: William Beals <will@beals5.com>
Date: Mon, 7 Aug 2000 21:51:32 -0600
X-Message-Number: 12

Jim:

Cool on things running! The hot regulator is normal if the backlight is turned on.

Don't dispair too much on the lack of weather sensors. We are pretty confident the problem is temporary and more will be available soon. We just don't know when "soon" is yet.

will

-----Original Message-----
From: james johnson [SMTP:wa6ozj@earthlink.net]
Sent: Monday, August 07, 2000 2:12 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: nothing-but-dots Matrix Display

Will,

Thanks for the support...it worked! Turns out it was a combination of problems. 1)I had one cold solder joint in one of the display data lines, and 2)I did have the contrast set wrong. Both now fixed, and it all works fine. I did notice the regulator heat sink does get quite warm...I recall someone else commenting on that too. I haven't had a chance to run it for any length of time, so don't know if the reg heating is normal, dangerous, or just the way things are.

Also, I saw the notice that Dallas had run out of senors...to bad. It would be nice if they could had gone on a while longer, as I have some other folks interested too...oh well.

Thanks again for the help and the speedy response!

73, Jim

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

74. [wxsig] wxsig digest: September 09, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:55 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120561-2000.11.20-13.02.23--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Saturday, September 09, 2000.

1. Flash reprogramming instructions
2. APRS modem for transmitting WX data
3. Re: APRS modem for transmitting WX data
4. Re: APRS modem for transmitting WX data
5. Status of T238 APRS Wx Station
6. RE: Status of T238 APRS Wx Station
7. Re: APRS modem for transmitting WX data
8. Re: APRS modem for transmitting WX data

Subject: Flash reprogramming instructions
From: William Beals <will@beals5.com>
Date: Sat, 9 Sep 2000 11:35:25 -0600
X-Message-Number: 1

Rick:

Thanks for the feedback.

Looks like I need to ammend the manual a bit on the part that insists you
need physical access to the sensor unit for calibration. This is the kind
of feedback I need to keep the manual clear. I knew of the exception(!!)

You asked about the rain counts. The rain counts are stored in
non-volatile memory, the flash. I used to have an external EEPROM for
things like IDs and such, but once I went to the 6808 with its flash, I
just stored the variables in there. When you run or re-run the calibration
routines you are reprogramming the internal flash with the new values. Not
quite self-modifying code, but dangerously close.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: APRS modem for transmitting WX data
From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sat, 9 Sep 2000 14:05:01 -0400
X-Message-Number: 2

Hi Folks,

Please excuse me if this has already been covered.

I finished building my T238 kit into a Radio Shack project box this morning
and as there is still loads of space left in there I thought I might add a
Tiny Trak module inside to act as the packet modem.

I know that as of about 6 weeks ago the Tiny Trak could only do GPS posits
but I was wondering if someone had looked at this and maybe mundged it to do
WX instaed/also.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

Subject: Re: APRS modem for transmitting WX data
From: Steve Dimse K4HG <sdimse@netrox.net>
Date: Sat, 9 Sep 2000 14:21:57 -0400
X-Message-Number: 3

On 9/9/00 2:05 PM Mark Phillips (g7ltt@g7ltt.com) wrote:

>I know that as of about 6 weeks ago the Tiny Trak could only do GPS posits
>but I was wondering if someone had looked at this and maybe mundged it to do
>WX instaed/also.
>
No one has to the best of my knowledge. I have code for the Pic-E that
uses the Peet extended record format (on the TAPR Pic-E web site), it
would be easy to modify it to use the data logging format used by the
T238. Then you'd just have to swap out the modem chip routines in the
Pic-E code and replace it with the resistor ladder code used by the Tiny
Track.

Steve K4HG

Subject: Re: APRS modem for transmitting WX data
From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Sat, 9 Sep 2000 14:39:07 -0400
X-Message-Number: 4

I haven't looked but I'm guessing that the Tiny Trak would be easier than that. I'm also guessing that the Tiny Trak just looks for a string starting with x and ending in y and then transmits it. This being the case it shouldn't be too hard should it?

Of course, I could have it totally wrong. I am after all only a amateur in this programming stuff.

Mark

----- Original Message -----
From: "Steve Dimse K4HG" <sdimse@netrox.net>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Saturday, September 09, 2000 2:21 PM
Subject: [wxsig] Re: APRS modem for transmitting WX data

> On 9/9/00 2:05 PM Mark Phillips (g7ltt@g7ltt.com) wrote:
>
> >I know that as of about 6 weeks ago the Tiny Trak could only do GPS posits
> >but I was wondering if someone had looked at this and maybe mundged it to do
> >WX instaed/also.
> >
> No one has to the best of my knowledge. I have code for the Pic-E that
> uses the Peet extended record format (on the TAPR Pic-E web site), it
> would be easy to modify it to use the data logging format used by the
> T238. Then you'd just have to swap out the modem chip routines in the
> Pic-E code and replace it with the resistor ladder code used by the Tiny
> Track.
>
> Steve K4HG
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: Status of T238 APRS Wx Station
From: kramrellim@home.com
Date: Sat, 09 Sep 2000 16:09:42 -0500
X-Message-Number: 5

I was very excited when I read in the Packet Status Register about the T238 APRS Wx Station. When I went to the TAPR WEB page I was disappointed to read the notice about Dallas Semiconductor discontinuing the 1-Wire(tm) Weather Station. But when I went to the announcement link I was confused. Can any body give me what the status of the 1 wire products. Is it too late for me to get involved with this kit.

Thanks and 73

Mark N5RFX

Subject: RE: Status of T238 APRS Wx Station
From: William Beals <will@beals5.com>
Date: Sat, 9 Sep 2000 18:38:32 -0600
X-Message-Number: 6

Mark:

Hopefully it is not too late. It is temporarily too late as Dallas has quit shipping the weather stations themselves. However, we hear rumors

that someone else will be picking up the kit and selling it soon. In
addition, I know of at least one person who is working on decent
instructions to build your own sensor unit and finding all the parts to
easily do it.

Naturally, as soon as something becomes available it'll be announced here
and on the TAPR web page.

will

-----Original Message-----
From: kramrellim@home.com [SMTP:kramrellim@home.com]
Sent: Saturday, September 09, 2000 3:10 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Status of T238 APRS Wx Station

I was very excited when I read in the Packet Status Register about the T238
APRS Wx Station. When I went to the TAPR WEB page I was disappointed to
read the notice about Dallas Semiconductor discontinuing the 1-Wire(tm)
Weather Station. But when I went to the announcement link I was
confused. Can any body give me what the status of the 1 wire products. Is
it too late for me to get involved with this kit.

Thanks and 73

Mark N5RFX

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

75. [wxsig] wxsig digest: July 29, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:23 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120560-2000.11.20-13.02.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Saturday, July 29, 2000.

1. Re: Auto Wx Discussion Group
2. Re: Auto Wx Discussion Group
3. NWS Special Statements
4. Re: NWS Special Statements
5. Re: NWS Special Statements
6. Re: NWS Special Statements
7. Re: NWS Special Statements
8. Re: NWS Special Statements
9. Re: NWS Special Statements

Subject: Re: Auto Wx Discussion Group
From: "LaPorteCounty Skywarn - N9ZIP" <lapcoskywarn@home.com>
Date: Sat, 29 Jul 2000 12:2:53
X-Message-Number: 1

I'm the new kid on the block. :) Thanks for starting APRS Weather
Discussions
here.

73's
Ken N9ZIP

On 07/24/00, ""Dale Huguley" <kg5qd@earthlink.net>" wrote:
> Hi All-
>   I have a need to discuss automatic NWS aprs weather stuff and spoke to
> Steve Dimse at Dayton about it. He suggested doing it here on the wxsig.
> However I have watched the discussions for two months or so and see nothing
> outside of messages concerning the T-238. I would rather not muddy the
> waters and cause your delete keys to wear out prematurely. It would be easy
> enough to set up a discussion group on another system. Let me know the
> group attitude.
>
> 73 de kg5qd Dale

Subject: Re: Auto Wx Discussion Group
From: William Beals <will@beals5.com>
Date: Sat, 29 Jul 2000 11:23:10 -0600
X-Message-Number: 2

Welcome Ken:

The idea of having data useful enough for NWS sounds pretty neat. One of
the main reasons I got involved in this project is that I wanted to get
some weather data from remote mountain places where no-one else bothers to
have weather stations. Even if they did, they are places where power and
telephone access (to get the data out) don't exist! Perfect application
for APRS.

will

-----Original Message-----
From: LaPorteCounty Skywarn - N9ZIP [SMTP:lapcoskywarn@home.com]
Sent: Friday, July 28, 2000 7:01 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Auto Wx Discussion Group

I'm the new kid on the block. :) Thanks for starting APRS Weather
Discussions
here.

73's
Ken N9ZIP

On 07/24/00, ""Dale Huguley" <kg5qd@earthlink.net>" wrote:
> Hi All-
>   I have a need to discuss automatic NWS aprs weather stuff and spoke
to
> Steve Dimse at Dayton about it. He suggested doing it here on the wxsig.
> However I have watched the discussions for two months or so and see
nothing
> outside of messages concerning the T-238. I would rather not muddy the
> waters and cause your delete keys to wear out prematurely. It would be
easy
> enough to set up a discussion group on another system. Let me know the
> group attitude.
>
> 73 de kg5qd Dale

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

76. [wxsig] wxsig digest: September 15, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:43:07 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120562-2000.11.20-13.02.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Friday, September 15, 2000.

1. PIC as SLAVE on a 1-wire net?
2. RE: Rain Gauge
3. RE: Weather Station
4. RE: PIC as SLAVE on a 1-wire net?

Subject: PIC as SLAVE on a 1-wire net?
From: Brooks Shera <ebs@lanl.gov>
Date: Fri, 15 Sep 2000 16:29:40 -0600
X-Message-Number: 1

I am interested in using a PIC interface as a slave device on a 1-wire
network with the master being something like a modified version of T238.
I am wondering if anyone has written, or knows of, PIC code that
implements the slave protocol?

A quick search of the net revealed only the code published in the Serial
Pic'n book which appears to be too primitive to coexist on a LAN with
standard Dallas Semi slave devices.

Any suggestions would be appreciated.

Brooks

Subject: RE: Rain Gauge
From: William Beals <will@beals5.com>
Date: Fri, 15 Sep 2000 19:15:20 -0600
X-Message-Number: 2

Charlie:

I did see your post a couple days ago. I waited responding to see if anyone else said they had a similar problem. As we both saw, no responces. With hindsight I should have told you I was doing that on purpose rather than letting you think you were abandoned, sorry.

I certainly havn't seen this problem myself and I can't think of a really good reason why 24 hours would be so magical. Is there anything in your RF setup that happens every 24 hours? The high presence of RF is of interest, but my only known problems were when I had a wire-wrapped board and no ferrites on any incoming or outgoing signals. Even with that, I am pretty sure my problem was RF getting into my external (non-ham-optimized) power supply. I suspect it was dirty power. If you can, a VERY good experiment would be to go through the pain of shutting down (or lowering the power) on some of your RF stuff to see if that affects the problem.

If you have a wall-wart to run the T238 with as an experiment, that will give you hints on dirty power or not. As a cheap shielding experiment you can first wrap the board in plastic (a ziplock bag is good) and then wrap a bunch of tin foil around the bag. Hopefully the plastic bag will be a good shield against shorts by the tin foil (no laibility here--BE CAREFUL!!)

When you said the Wx station ran fine with the software, I assume you are referring to the Dallas PC software. I would suggest trying again on the PC for a day or two to confirm it wasn't something on the sensor that may have gone south around the swap time. That will certainly isolate it to the T238 and its environment if the swap back to the PC shows no problems. There is little in the software that does a lot on a 24-hour basis.

The fact that the rain display goes to dashes implies constant errors or forgetting the fact that a rain sensor is out there. Is the rain error continuously counting when you get the dashes? Have you tried just cycling power instead of re-detecting the rain guage. The software does very different things and that would give me a good hint as to where to look for problems.

Finally, do you have an oscilloscope? It would be very nice to look at the 1-wire waveform and see if the signal is barely OK. Russ ran into a problem where a sensor unit was bad and dragging down the 1-wire bus. Alas the Dallas interface is more tolerant of the fault condition than the T238, so as the bus degraded it worked with the Dallas interface but not with the T238. The sensor was definitely bad and needed replacing, but it initially only showed up on the T238 so we were thinking it was a T238 problem for quite a while. If you don't have an oscilloscope, try looking at the voltage with a voltmeter. In general you should see 5-8-5.0 volts with an occasiona dip to something "less". If the normal voltage is anything less than 4.5Volts, then you may have a sensor problem. The multimeter isn't too great as you are measuring a dynamic bus with something intended to measure DC voltages, but at least it may give you a hint.

Hope this helps. Please let me (and the sig) know what you find.

will

-----Original Message-----
From: calfano [SMTP:calfano@worldnet.att.net]
Sent: Friday, September 15, 2000 5:09 AM
To: will@beals5.com
Subject: Rain Gauge

Need Info,

I tried the SIG and got no response so now I try the professor. I have a Rain gauge on my 238. After approximately 24 hrs. there is no rain display [i.e. -- in display].
I re-detect the unit it runs for another day. There are 1 or 2 errors for the gauge and the temp sensor every time it quits.
The wex station ran fro 2 months with the software. My questions is the unit prone to RF? It is 10" from a 150w 6 meter amp. and 10" from the 40w aprs digi. All the units are on the same Astron 70 amp supply so it could be power. Have you any Ideas?? Other then this problem it works great.

73
Charlie
WA2GUG << File: calfano.vcf >> << File: smime.p7s >>

Subject: RE: Weather Station
From: William Beals <will@beals5.com>
Date: Fri, 15 Sep 2000 19:16:06 -0600
X-Message-Number: 3

Cary:

(I'm copying the TAPR wxsig reflector as well)

Thr T238 was primarily designed to NOT need an internet link to work. The general idea was to broadcast your weather via APRS and hopefully have a local igate that will pick up the data and put it on the internet for your. A 24/7 connection for your data that does not cost anything or take up a lot of power (I estimate a regular computer uses about $10/month in electricity if on 24/7).

Having said that, there is no reason you have to use the station in its primary intent. The real job of the T238 is to get raw data from the cheap Dallas weather station electronics, process it, display it, and send it out on a UART. The destination can be either a TNC or computer (or mabye something else, who knows).

Beyond the firmware that processes the 1-wire weather data and sends it out to the TNC, I am using other peoples software. I send the data out my TNC, the data gets relayed from here in Denver to an igate in Colorado springs and goes to the APRServe server in Miami. The findu.com website gets the data from the APRServe server and displays nice pictures. There is lots of good stuff out there that I just take advantage of, the T238 just supplies the data to the network.

The T238 can also be hooked up to a computer. One of the UART modes emulates a Peet Bros format, so if you have some freeware that interprets that format, the T238 will supply the data.

To set up a T238 you will need the kit and a weather station. The latter is the hard part. Dallas discontinued the weather station about 6 weeks ago. I am confident that someone will come up with a replacment weather station soon, either commercially or as a home project. The cost of the Dallas sensor unit was $80 plus $60 for the rain guage. The T238 kit is about $120. You get a very nice system for a bit over $200, less than half of any of the commercial solutions.

The firmware for the T238 is on the beals5.com website for your viewing enjoyment.

Hopefully that answers some of your questions. I'll be happy to answer others.

will

-----Original Message-----
From: Selden, Cary [SMTP:cselden@coastcom.com]
Sent: Thursday, September 14, 2000 1:41 PM
To: 'will@beals5.com'
Subject: Weather Station

Hi Will:

A friend passed along the web address for the inexpensive weather station
and ultimately I got to your email. The weather station, particularly the
web aplication, appears to be just what the doctor ordered.

However, I am a bit overwhelmed as to what exactly is required and
whathooks
to what. I currently have a phone line, ISP and a method of FTP-ing files,
I jsut need something to send.

I saw the web site of N0XGA. What is there seems like it will do for me
what I need.

Can or will you send me a list of big pieces? Is the software availble?

Cary

Subject: RE: PIC as SLAVE on a 1-wire net?
From: William Beals <will@beals5.com>
Date: Fri, 15 Sep 2000 19:28:26 -0600
X-Message-Number: 4

Brooks:

I have been wanting to do something similar. When Dallas quit making the
outdoor unit I wanted to do another one but put a bit of intelligence out
at the sensor unit. That intelligence was intended to get something better
than the 22.5 degree resolution on wind speed the sensor has. Alas I
couldn't come up with a decent way of doing it with a little micro.

Here were the tricky bits I ran into.

1) There is no way you could power the micro from the 1-wire bus, you would
need a power line. Three wires by my count, two by Dallas's count (they
don't count ground for some reason :-)).

2) Nasty timing. The 1-wire bus bits are basically sent using pulse width
modulation. The short pulses are REALLY short and the slave device is
expected to respond to a pulse from the master lasting less than 1us and be
expected to hold that line low if it wants to send back a '0' bit. This
probably would be possible with a little micro, but it would not be able to
do anything else, it would need to be in a dedicated polling loop and even
then 1us reponse times are not easy. I figured at a minimum there would
need to be some helper electronics outside the micro for the lowest level
of the interface. The basic bit time is 60us which is pretty tough on a
slave micro too. BTW: This kind of interface is OK for a micro to be a
master for as it is in control of all the timing and in my case I am in a
tight timing loop on the T238. As the master though, I only need to be in
that loop when I and sending/requesting data. A slave on the bus would
need to be monitoring the bus all the time, not so pretty.

If you can live with the first problem (no solutions there), the second
problem could be solved but would almost certainly require extra circuitry
outside the micro and would not be a pure software project. I suspect that
may be why you have not found anything referenced yet.

will
-----Original Message-----
From: Brooks Shera [SMTP:ebs@lanl.gov]
Sent: Friday, September 15, 2000 4:30 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] PIC as SLAVE on a 1-wire net?

I am interested in using a PIC interface as a slave device on a 1-wire
network with the master being something like a modified version of T238.
I am wondering if anyone has written, or knows of, PIC code that
implements the slave protocol?

A quick search of the net revealed only the code published in the Serial
Pic'n book which appears to be too primitive to coexist on a LAN with
standard Dallas Semi slave devices.

Any suggestions would be appreciated.

Brooks

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

77. [wxsig] wxsig digest: September 16, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:43:10 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120563-2000.11.20-13.02.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Saturday, September 16, 2000.

1. Re: PIC as SLAVE on a 1-wire net?
2. Re: PIC as SLAVE on a 1-wire net?

Subject: Re: PIC as SLAVE on a 1-wire net?
From: "john e mclemore" <turkey2@frontiernet.net>
Date: Sat, 16 Sep 2000 06:39:10 -0500
X-Message-Number: 1

hi,sending dc out the two wires takes some "jury rig" but no problem. why
not use a AD converter at each wx instrument each with its own baud rate? it
would be a real nightmare to use anyother system with the tex encode/decode
without knowing the medthod...73,john
----- Original Message -----
From: "Brooks Shera" <ebs@lanl.gov>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: September 15, 2000 17:29
Subject: [wxsig] PIC as SLAVE on a 1-wire net?

> I am interested in using a PIC interface as a slave device on a 1-wire
> network with the master being something like a modified version of T238.
> I am wondering if anyone has written, or knows of, PIC code that
> implements the slave protocol?
>
> A quick search of the net revealed only the code published in the Serial
> Pic'n book which appears to be too primitive to coexist on a LAN with
> standard Dallas Semi slave devices.
>
> Any suggestions would be appreciated.
>
> Brooks
>
> ---
> You are currently subscribed to wxsig as: turkey2@frontiernet.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: Re: PIC as SLAVE on a 1-wire net?
From: William Beals <will@beals5.com>
Date: Sat, 16 Sep 2000 07:48:14 -0600
X-Message-Number: 2

John:

I agree, if I were starting from scratch I'd have chosen something
different. The Dallas-based sensor unit was to compelling to ignore
though.

will

-----Original Message-----
From: john e mclemore [SMTP:turkey2@frontiernet.net]
Sent: Saturday, September 16, 2000 5:39 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: PIC as SLAVE on a 1-wire net?

hi,sending dc out the two wires takes some "jury rig" but no problem. why
not use a AD converter at each wx instrument each with its own baud rate?
it
would be a real nightmare to use anyother system with the tex encode/decode

without knowing the medthod...73,john

78. [wxsig] wxsig digest: October 07, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:43:32 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120564-2000.11.20-13.02.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Saturday, October 07, 2000.

1. Re: T238 JR
2. Re: T238 JR
3. Re: T238 JR
4. Some thoughts

Subject: Re: T238 JR
From: Doug <dbuhrman@radiks.net>
Date: Sat, 07 Oct 2000 08:40:31 -0600
X-Message-Number: 1

Rich Beckwith wrote:

> I am ready to begin construction of my second T238. There was talk of a
> smaller form factor board from some of the sig members. Is someone still
> working on this?
>
> Also, has anyone done current measurements on the T238? Aside from removing
> the display, are there additional things I can do to reduce current
> consumption. I am planning a remote monitoring project and want to reduce
> current comsumption as much as possible.
>
> Tnx,
>
> Rich Beckwith - Wn0x
>
>

Rich:
Without a display my T238 draws 48mA. I put together a version of the T238 using surface mount and
got the size down to 2.4 x 2.9 inches.

Subject: Re: T238 JR
From: William Beals <will@beals5.com>
Date: Sat, 7 Oct 2000 07:55:21 -0600
X-Message-Number: 2

Doug:

Did you do a layout or hand assembly? Sounds cool!

will

Rich:
Without a display my T238 draws 48mA. I put together a version of the T238 using surface mount and
got the size down to 2.4 x 2.9 inches.

79. [wxsig] wxsig digest: September 28, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:43:18 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120565-2000.11.20-13.02.52--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Thursday, September 28, 2000.

1. RE: DS 1994 clock chip
2. APRSWXNET info
3. RE: DS 1994 clock chip
4. Intermittent Data Tx
5. RE: Intermittent Data Tx

Subject: RE: DS 1994 clock chip
From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Thu, 28 Sep 2000 06:03:29 -0400
X-Message-Number: 1

The 'clip' looks like the motherboard battery holder. Have you noticed that
the button will only fit into the clip upside down which then causes a
conflict in the wiring standard? The legend on the clip says that the
contact at the top of the clip is + and bottom is - flying in the face of
the button legend.

----- Original Message -----
From: "Brian B. Riley" <brianbr@wulfden.org>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, September 27, 2000 10:08 PM
Subject: [wxsig] RE: DS 1994 clock chip

>
> when you say "clip" are you talking about the iButton "blue dot" adapter
> with RJ11 on it or are you talking about the holder that is a PC Board
> mount similar to the thingy that is used on PC motherboards to hold
> batteries? If it is the latter, just solder it down on the prototyping
> area and run two "blue wire" patches to 1-wire bus and gnd.
>
> > -----Original Message-----
> > From: bounce-wxsig-15705@lists.tapr.org
> > [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of William Beals
> > Sent: Wednesday, September 27, 2000 10:06 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] RE: DS 1994 clock chip
> > >
> > >
> > Mark:
> > >
> > Parallel. The best thing I've found is a telephone
> > double-adapter. You have to squeeze in the power connector a
> > bit, but it works nicely.
> > >
> > As you saw on earlier posts today: DON'T SET THE WRITE
> > PROTECTION BIT!!!
> > >
> > will
> > >
> > -----Original Message-----
> > From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> > Sent: Wednesday, September 27, 2000 7:43 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] DS 1994 clock chip
> > >
> > >
> > My button arrived today along with the ibutton 'clip' do I
> > just paralell it
> > up onto the 1 wire bus or is it serial?
> > >
> > Mark Phillips, G7LTT/KC2ENI
> > New York, NY - 11103
> > 40' 45.781N 073' 54.472W
> > http://www.g7ltt.com
> > >
> > >
> > >
> > ---
> > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> > >
> > >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: APRSWXNET info
From: "Russ Chadwick" <crb5@uswest.net>
Date: Thu, 28 Sep 2000 07:09:27 -0600
X-Message-Number: 2

I made some changes, corrected some errors, and added two new stations to
APRSWXNET, which now has 8 stations. The changes I make on findu.com (to
send the data) happen quickly. However, the changes to QCMS (to receive the
data) happen much slower and should happen in the next day or so. When our
symbols on the maps change from lower case to upper case, the change has
taken place. So, for example, when my station near Denver changes from
"ap001" to "AP001", that means the changes are in place. Henceforth, the
stations will be in this upper case format. That's one of the changes that
the QCMS people asked for.

Another change is that I took all of the position locations from findu.com.
That way there is a common source of the location data. So anyone wishing
to join this activity of monitoring the quality of your weather station
data, just send me your callsign and I'll include you in the next change
which will be in about a week.

Russ
kb0tvj

Subject: RE: DS 1994 clock chip
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 28 Sep 2000 11:12:10 -0500
X-Message-Number: 3

Yup, the clip is backwards. I don't know if other I-Button devices are =
the reverse of this but it is confusing. I wired my DS1994 backwards the =
first time because I assumed + to be the data side. For those of you who =
have the I-Button holder, there is a ground connection near the break-out =
grid that is handy, and you can take your 1-Wire bus input from pin 14 of =
J6. Be careful when you are counting pins as J6 is not numbered the same =
as a DIP package.

DO NOT check the write protection when setting the time on the DS1994 as =
you will NEVER be able to change that function again.

It is really cool being able to grab the time from this device. I could =
have set up a 9 volt battery as a backup, and still may, but this is a =
nice way not to have to reset the time when you have completely powered =
off.

Rich Beckwith - Wn0x

Subject: Intermittent Data Tx
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 28 Sep 2000 11:18:15 -0500
X-Message-Number: 4

Will,=20

I am still working on the intermittent problem with my station not =
reporting. I verified that the computer port was getting the information. =
 When I hooked up to the TNC port and ran it's output to another terminal =
session nothing would show up. After re-setting the T238 I would see data =
again.
Is the output to the PC parallel with the TNC? Does it run from a =
different port on the MAX232? I reseated the MAX232 and checked my solder =
connections in the area and so far this morning I am still reporting data. =
 I have everything in place now to check the TNC port if it quits again =
and will let you know what I find.

Rich - Wn0x

Subject: RE: Intermittent Data Tx
From: William Beals <will@beals5.com>
Date: Thu, 28 Sep 2000 19:15:30 -0600
X-Message-Number: 5

Rich:

Exactly the same signals go to to the TNC and PC ports. The only
difference is the sex of the connector and swapping the Tx and Rx pins.
 That only purpose behind having two ports is to save a needed adapter and
having half of the users suggesting I chose the wrong one! As such, keep
in mind that you should not plug both a PC and TNC in at the same time.
 You'd end up shorting a few RS-232 signals together.

Lemme know what you find out. The fact that you don't see the data
dissapear coming out of the T238 is encouraging.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Thursday, September 28, 2000 10:18 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Intermittent Data Tx

Will,

I am still working on the intermittent problem with my station not
reporting. I verified that the computer port was getting the information.
 When I hooked up to the TNC port and ran it's output to another terminal
session nothing would show up. After re-setting the T238 I would see data
again.
Is the output to the PC parallel with the TNC? Does it run from a
different port on the MAX232? I reseated the MAX232 and checked my solder
connections in the area and so far this morning I am still reporting data.
 I have everything in place now to check the TNC port if it quits again and
will let you know what I find.

Rich - Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

80. [wxsig] wxsig digest: October 18, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:43:53 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120566-2000.11.20-13.03.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Wednesday, October 18, 2000.

1. RE: DS1994 Help

Subject: RE: DS1994 Help
From: William Beals <will@beals5.com>
Date: Wed, 18 Oct 2000 21:01:38 -0600
X-Message-Number: 1

Bill:

If you have confirmed that you have at least version 1.10.0 of the
firmware, as part of the startup process it goes out and looks for the ID
of the DS1994. If it finds that ID the only way for it to fail is to have
a date code that is less than 1/1/00. The best two things I can check is
to make really sure you have a solid connection from the T238 to the DS1994
and make sure the time/date is later than 1.1.00.

If you can, measure the voltages right at the DS1994. With a volt meter
you should mostly see 5V and the occasional dip to something less as the
voltmeter tries to deal with the data pulses.

Lemme know if you find out anything intereseting.

will

-----Original Message-----
From: Bill Hosking [SMTP:billh@inficad.com]
Sent: Friday, October 13, 2000 7:56 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] DS1994 Help

I have a puzzlement here, or I'm just missing a step...
I just installed a 1994 RTC in my T238 (Thanks to Rich's help/advice)

With the T238 off and RJ connector connected to my laptop, the TMEX program
immediately detected the ibutton and allowe me to set it. By the way, I
used the 'non-inverted' rj11 phone cord.

I loaded version 10 into T238 and turned it on with wx sensors plugged back
on. I expected it to automatically find/recognize the RTC - it didn't.

Rest of version 10 plays just fine.

Do I have to direct the T238 to find the 1994 like I did with the rest of
the sensors??

thanks
Bill W7JSW

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

81. [wxsig] wxsig digest: November 15, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:44:16 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120567-2000.11.20-13.03.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Wednesday, November 15, 2000.

1. Re: Fw: [weather] Humidity Sensor
2. 1-Wire WX from Mexico
3. Mexican 1-Wire unit
4. Re: Fw: [weather] Humidity Sensor
5. Re: Fw: [weather] Humidity Sensor

Subject: Re: Fw: [weather] Humidity Sensor
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 15 Nov 2000 08:23:56 -0600
X-Message-Number: 1

How could I modify the sensor to make it easier? Is there something I can =
put on the board that you can detect, thus verifying it as "wills" bp =
sensor?

>>> will@beals5.com 11/14/00 07:59PM >>>
Rich:

It is good that they use the same chip from a pure driver standpoint. =
It=20
is a real pain in the neck when you see two of them on the bus to =
figure=20
out which is which. I have that fun now trying to distinguish between =
rain=20
sensors and wind speed sensors! I guess every silver lining needs a=20
cloud--oh well :-).

will

Great, DS2438 support suggests that a BP sensor based on the same AD=20
converter shouldn't be hard to add to the T238. I still have the =
schematic=20
and board layout for a DS2438 based BP sensor if you guys need it.

Subject: 1-Wire WX from Mexico
From: Alan Heaberlin <w6amh@yahoo.com>
Date: Wed, 15 Nov 2000 17:03:16 -0800 (PST)
X-Message-Number: 2

I just received my 1-Wire WX sensor from AAG in
Mexico. It looks just like a stock Dallas unit with no
Made in Mexico legends or anything that would identify
it as other than a Dallas-made unit.
After running TMEX and identifying the port and
adaptor it still tells me it "cannot find the DS2407
on the MicroLan."
When I run the autodetect program on the TMEX it finds
a DS9097E but the serial port adaptor says (on it) it
is a DS9087U. Efforts to get it to recognize the "U"
device are unrewarded.
Running Creatlist I get the message that a 1-Wire Net
port does not exist.
I have double checked my computer ports and it
supposedly loads the DS9097E on either Com 1 or 2. I
have uninstalled and reloaded both programs and no joy
yet. Any ideas on what I might be doing wrong?

By the way, I ordered the unit from AAG on Monday late
afternoon and faxed their order page with a photocopy
of my check to them which I mailed on Tuesday. I had
the unit Wed. at 11:00am. That's what I call service!
Now if I can just get it to work...
Alan Heaberlin
W6AMH

_____
Do You Yahoo!?
Yahoo! Calendar - Get organized for the holidays!
http://calendar.yahoo.com/

Subject: Mexican 1-Wire unit
From: William Beals <will@beals5.com>
Date: Wed, 15 Nov 2000 20:43:22 -0700
X-Message-Number: 3

John and Alan:

Cool, looks like they respond really fast!

Alan: Alas I am not an expert on the TMEX software. Every adapter I've
had though has been for a DS9097U. Is the adapter itself marked so you
know what it is supposed to be? Are you using only the cables supplied
(assuming they supplied them all)? One of the fun things with the
telephone cables is that you can get cables with swapped pins which
effectively shorts th bus to ground and makes nothing work. A good test for
this would be to have only the DS9097?? plugged in and see if you can
reliably read it. If you can and plugging a cable in messes things up,
then that is likley your problem. It could also be a bad wx unit, but
hopefully not.

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: Re: Fw: [weather] Humidity Sensor
From: William Beals <will@beals5.com>
Date: Wed, 15 Nov 2000 20:45:29 -0700

X-Message-Number: 4

Rich:

I am pretty much going to have to deal with the issue anyway when both
Dallas parts come out. I appreciate the offer though!

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Wednesday, November 15, 2000 7:24 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Fw: [weather] Humidity Sensor

How could I modify the sensor to make it easier? Is there something I can
put on the board that you can detect, thus verifying it as "wills" bp
sensor?

>>> will@beals5.com 11/14/00 07:59PM >>>
Rich:

It is good that they use the same chip from a pure driver standpoint. It
is a real pain in the neck when you see two of them on the bus to figure
out which is which. I have that fun now trying to distinguish between rain
sensors and wind speed sensors! I guess every silver lining needs a
cloud--oh well :-).

will

Great, DS2438 support suggests that a BP sensor based on the same AD
converter shouldn't be hard to add to the T238. I still have the schematic
and board layout for a DS2438 based BP sensor if you guys need it.

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

82. [wxsig] wxsig digest: November 14, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:44:13 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120568-2000.11.20-13.03.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Tuesday, November 14, 2000.

1. APRSWXNET Updated (finally)
2. Re: APRSWXNET Updated (finally)
3. Fw: [weather] Humidity Sensor
4. Re: Fw: [weather] Humidity Sensor
5. Re: Fw: [weather] Humidity Sensor

Subject: APRSWXNET Updated (finally)
From: "Russ Chadwick" <crb5@qwest.net>
Date: Mon, 13 Nov 2000 23:14:56 -0700
X-Message-Number: 1

APRSWXNET now has 11 stations (AP001 - AP011) that are regularly sending
amateur radio weather data through APRSSERVE in Miami to a computer in
Boulder, CO. There the data is compared with a real-time numerical weather
model for quality checking. Quality checks are made every hour and the
results posted to:

http://www-sdd.fsl.noaa.gov/MSAS/qcms.html

Look under "Current QC Summary Messages" for text output. The correct APRS
stations are AP001 to AP011 where the upper case are the updated stations
and any lower case are the old stations which have some incorrect locations.
Also look under "Real Time Graphics" for crude maps of the stations sending
weather data to the Quality Checking and Monitoring System (QCMS). Our
stations are marked ap001 to ap011 on the maps and upper case designations
will not show up on the maps.

I think that the APRSWXNET locations are correct, but if you should find an
error, let me know. Changes and additions should be easier to make in the
future. I promised a more extended write-up and I will provide that in the
near future.

Russ
kb0tvj

Subject: Re: APRSWXNET Updated (finally)
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Tue, 14 Nov 2000 05:13:13 -0600
X-Message-Number: 2

Russ Chadwick wrote:
>
> APRSWXNET now has 11 stations (AP001 - AP011) that are regularly sending
> amateur radio weather data through APRSSERVE in Miami to a computer in
> Boulder, CO. There the data is compared with a real-time numerical weather
> model for quality checking. Quality checks are made every hour and the
> results posted to:
>
> http://www-sdd.fsl.noaa.gov/MSAS/qcms.html
>
> Look under "Current QC Summary Messages" for text output. The correct APRS
> stations are AP001 to AP011 where the upper case are the updated stations
> and any lower case are the old stations which have some incorrect locations.
> Also look under "Real Time Graphics" for crude maps of the stations sending
> weather data to the Quality Checking and Monitoring System (QCMS). Our
> stations are marked ap001 to ap011 on the maps and upper case designations
> will not show up on the maps.
>
> I think that the APRSWXNET locations are correct, but if you should find an
> error, let me know. Changes and additions should be easier to make in the
> future. I promised a more extended write-up and I will provide that in the
> near future.

Looks like I have a sensor problem! I'll try to change the
temp/dewpoint sensor and troubleshoot the baro discrepancy this weekend!

Thanks, Russ!
73, gerry n5jxs
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

Subject: Fw: [weather] Humidity Sensor
From: "Russ Chadwick" <crb5@qwest.net>
Date: Tue, 14 Nov 2000 05:51:21 -0700
X-Message-Number: 3

This is a multi-part message in MIME format.

------=_NextPart_000_000E_01C04DFE.EA143A40
Content-Type: text/plain;
        charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

This is a message with attachment that gives some information on the
humidity sensor and on the barometer for the 1-Wire weather station. We
have a beta version of the humidity and Will is working with it now so that
the T-238 will be able to interface with it.

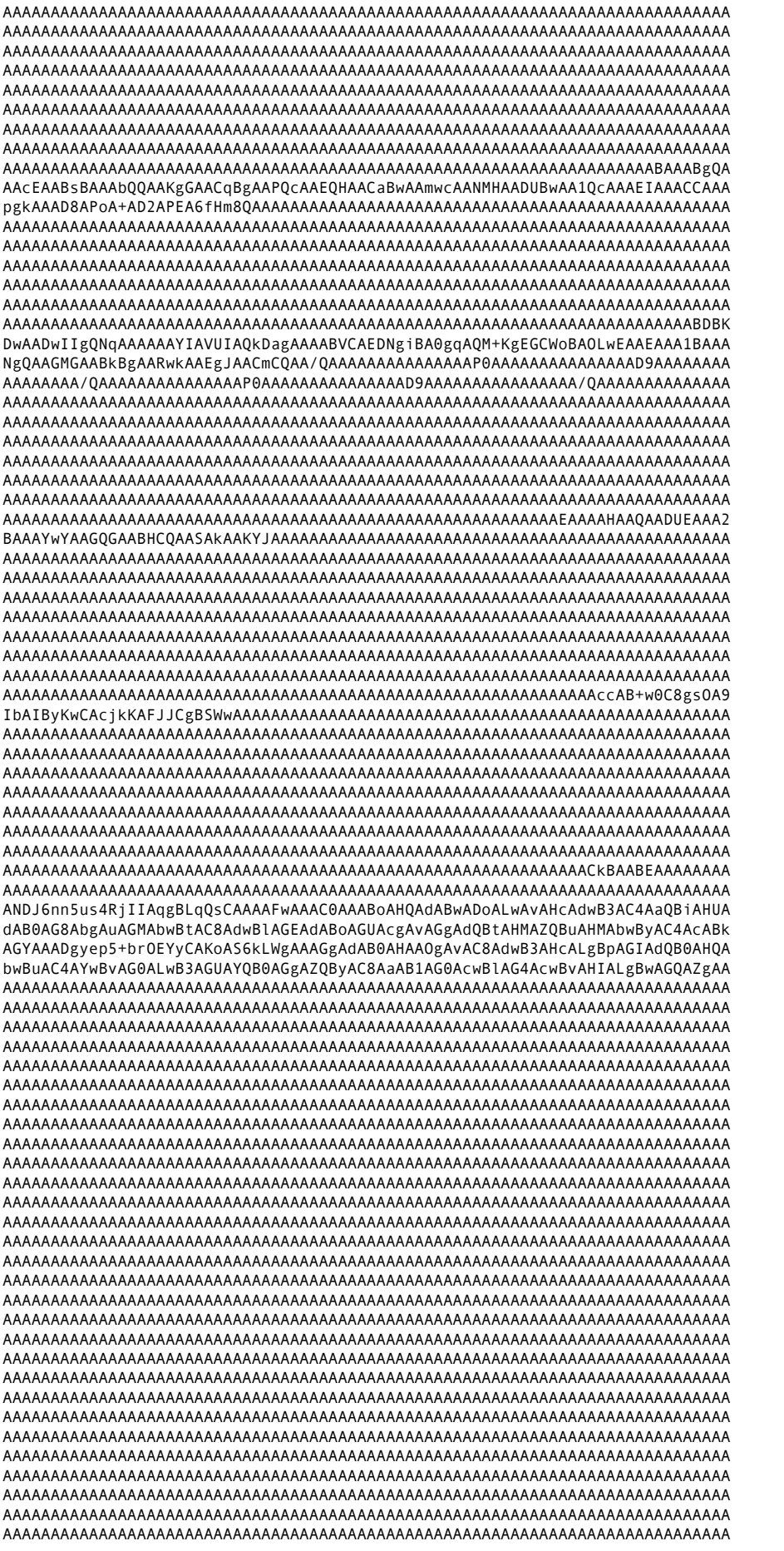
Russ
kb0tvj

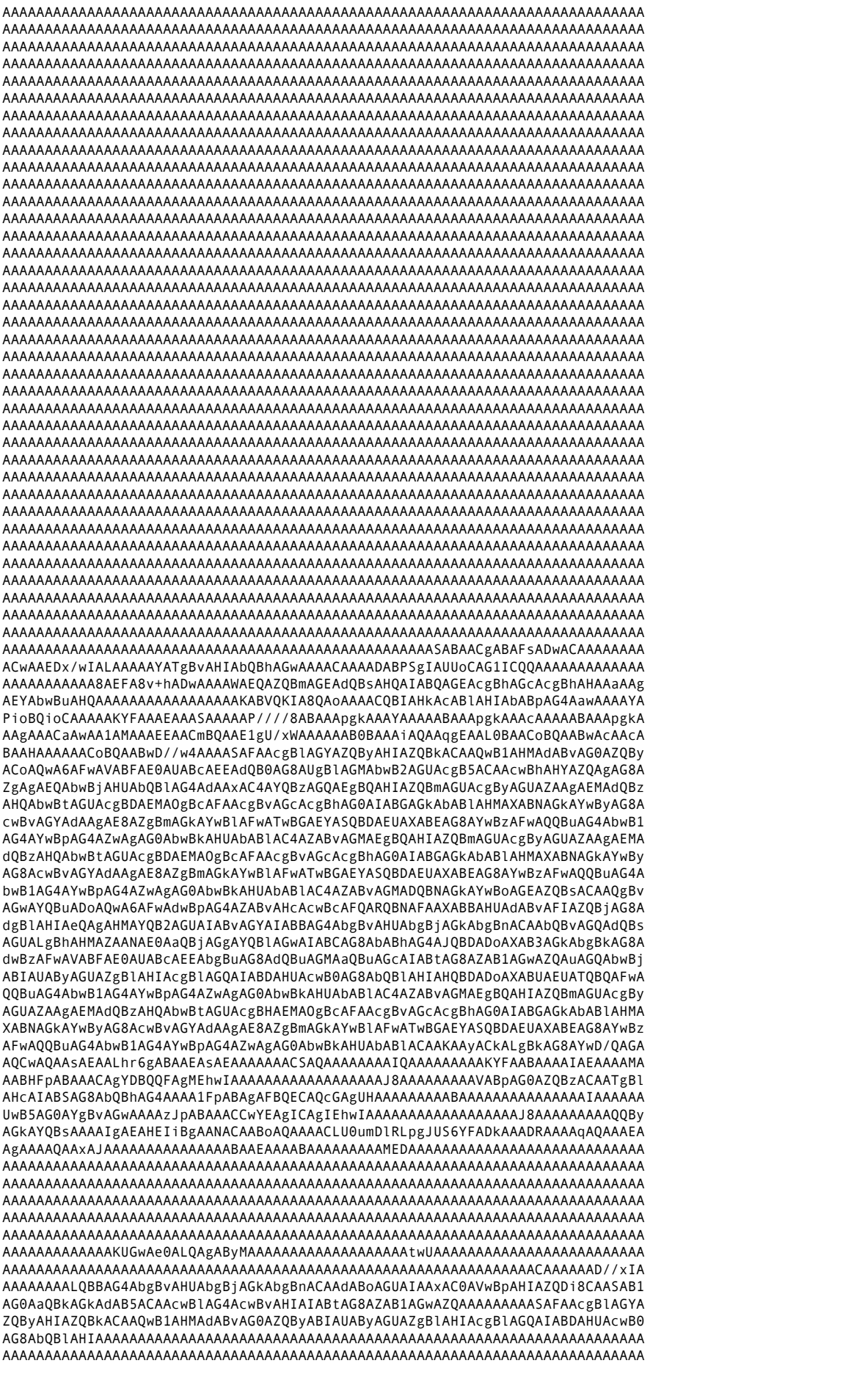
> > -----Original Message-----
> > From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]
> >
> > Please see the attached document concerning the availability of the
> > humidity sensor which will be posted to the web site soon. Basically,
> > Dallas Semiconductor has decided to enhance the Humidity iButton by

> > adding a light sensor. The revised product introduction schedule has
> > been pushed out to April. Meanwhile a humidity module similar to that
> > discussed in the recent article in Sensors magazine will be available
> > Dec 15th at $20.
> >
> > The barometer is still stalled for delivery of sensing elements.
> >
> > Thanks for your interest in Dallas Semiconductor products.
> >
> > Dan Awtrey   Staff Engineer
> > Dallas Semiconductor   Phone: 972-371-6297
> > Building C   FAX: 972-371-3715
> > 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com
> > Dallas, TX 75244-3292
> > http://www.ibutton.com
> >

------=_NextPart_000_000E_01C04DFE.EA143A40
Content-Type: application/msword;
        name="Announcing module.doc"
Content-Transfer-Encoding: base64
Content-Disposition: attachment;
        filename="Announcing module.doc"

0M8R4KGxGuEAAAAAAAAAAAAAAAAAAAAAPgADAP7/CQAGAAAAAAAAAAAAAAABAAAAKwAAAAAAAAAA
EAAALQAAAAEAAAD+////AAAAACoAAAD///
//
//
//
//
//
//
///s
pcEAcQAJBAAACBK/AAAAAAAAEAAAAAAABAAApgkAAA4AYmpianQrdCsAAAAAAAAAAAAAAAAAAAAA
AAAJBBYAHhIAABZBAQAWQQEApgUAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAD//w8AAAAA
AAAAAAD//w8AAAAAAAAAAAD//w8AAAAAAAAAAAAAAAAAAAAAAAF0AAAAAAMQAAAAAAAAAAxAAAAMQA
AAAAAAAAxAAAAAAAAAAADEAAAAAAAAAAAMQAAAAAAAAAAAxAAAABQAAAAAAAAAAAAAAANgAAAAAAAAAAA2AAA
AAAAAADYAAAAAAAAAANgAAAAAAAAAAA2AAAAAwAAADkAAAADAAAANgAAAAAAAAAAAaQUAALYAAAD8AAAA
FgAAABIBAAAAAAAAAEgEAAAAAAAAAASAQAAAAAAAABIBAAAAAAAAAEgEAAAAAAAAAASAQAAAAAAAABIBAAAA
AAAALgUAAAIAAAAwBQAAAAAAAADAFAAAAAAAAAAMAUAAAAAAAAAAwBQAAAAAAAADAFAAAAAAAAAAMAUAACQA
AAAfBgAA9AEAABMIAADMAAAAVAUAABUAAAAAAAAAAAAAAAAAAAAAAAAAAxAAAAAAAAAAAASAQAAAAAA
AAAAAAAAAAAAAAAAAAAAAAASAQAAAAAAAABIBAAAAAAAAAEgEAAAAAAAAAASAQAAAAAAAAFQFAAAAAAAA
PgEAAAAAAAADEAAAAAAAAAAAMQAAAAAAAAAAAEgEAAAAAAAAAAAAAAAAAAAAAABIBAAAAAAAAA/AAAAAAAAAA+
AQAAAAAAAAD4BAAAAAAAAPgEAAAAAAAAAASAQAAIgAAAMQAAAAAAAAAAAEgEAAAAAAAADEAAAAAAAAAAABIB
AAAAAAAALgUAAAAAAAAAAAAAAAAAAAAAAAAAAAAA2AAAAAAAAAAADYAAAAAAAAAAAMQAAAAAAAAAAAxAAA
AAAAAADEAAAAAAAAAAAMQAAAAAAAAAAAEgEAAAAAAAAAAuBQAAAAAAAAD4BAADwAwAAPgEAAAAAAAAAAAAAA
AAAAAC4FAAAAAAAAAAxAAAAAAAAAAADEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAALgUAAAAAAAAAASAQAAAAAAAAAPAAAAAMAAAA0H5olmNL
wAHYAAAAAAAAAAANgAAAAAAAAAAANAEAAAoAAAAuBQAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMS1X
aXJlKCBIdW1pZGl0eSBtb2R1bGUgZm9yIGRldmVsb3BlcnMvZXhwZXJpbWVudGVycw0NRGFsbGFz
IFNlbWljb25kdWN0b3IgaGFzIGRlY2lkZWQgdG8gbWFrZSB0aGUgSHVtaWRpdHkgaUJ1dHRvbiBh
IG1vcmUgY2FwYWJsZSBpbnN0cnVtZW50IGJ5IGFkZGluZyBhIGxpZ2h0IHNlbnNvci4gVGhlIHJl
dmlzZWQgcHJvZHVjdCBpbnRyb2R1Y3Rpb24gc2NoZWR1bGUgaGFzIGJlZW4gcHVzaGVkIG91dCB1
bnRpbCBBcHJpbCAyMDAxIGFuZCB0aGUgaW5zdHJ1bWVudCB3aWxsIGJlIGNhbGxlZCB0aGUgSHln
cm8gaUJ1dHRvbi4gRW5naW5lZXJpbmcgd29yayBpcyBjb250aW51aW5nIG9uIHRoaXMgaW5zdHJ1
bWVudCB3aGljaCB3aWxsIHVzZXMgc2V2ZXJhbCBlbnZpcm9ubWVudGFsIGNvbmRpdGlvbnMg
YXNzb2NpYXRlZCB3aXRoIGdyb3dpbmcgcGxhbnRzLS10ZW1wZXJhdHVyZSwgaHVtaWRpdHkgYW5k
IGxpZ2h0LiBEUyBleHBlY3RzIHRvIGJlIGFibGUgdG8gb2ZmZXIgaXQgYXQgdGhlIHNhbWUgJDI1
IHByaWNlIHBvaW50LiBMaW1pdGVkIHByb2R1Y3Qgc2FtcGxlcyB3aWxsIGJlIGF2YWlsYWJsZSBi
ZWZvcmUgQXByaWwgZm9yIHNvZnR3YXJlIGRldmVsb3BtZW50Lg0NRFMgd2lsbCBiZSBtYWtpbmcg
YSBodW1pZGl0eSBzZW5zb3IgbW9kdWxlIGF2YWlsYWJsZSBzdGFydGluZyBEZWMgMTV0aC4gVGhl
IG1vZHVsZSBjb25zaXN0cyBvZiBhIGh1bWlkaXR5LXNlbnNpbmcgZWxlbWVudCBpbiBjb21iaW5h
dGlvbiB3aXRoIG91ciBEUzI0MzggMS1XaXJlIGNoaXAgYXMgZGVzY3JpYmVkIGluIGFuIGFydGlj
bGUgaW4gdGhlIEF1ZyAyMDAwIGlzc3VlIG9mIFNlbnNvcnMgbWFnYXppbmUuIFRoZSBhcnRpY2xl
IGlzIGF2YWlsYWJsZSBvbiBvdXIgd2ViIHNpdGUgYW5kIGNhbiBiZSByZWFkIGFuZCBkb3dubG9h
ZGVkIGF0IIBMgSFlQRVJMSU5LIGh0dHA6Ly93d3cuaWJ1dHRvbi5jb20vd2VhdGhlci9odW1zZW5z
b3IucGRmIAEUaHR0cDovL3d3dy5pYnV0dG9uLmNvbS93ZWF0aGVyL2h1bXNlbnNvci5wZGYVLiBU
aGUgaHVtaWRpdHkgbW9kdWxlIHdpbGwgYmUgYXBwcm94aW1hdGVseSAwLjY1lCB4IDAuNTCUIHRv
IGVuYWJsZSBpdCB0byBiZSBtb3VudGVkIGluc2lkZSBhIFJKKLTExIHRvIFJKKLTExIGluLWxpbmUg
dGVsZXBob25lIGNvdXBsZXIgY29udmVuaWVudCBmb3IgYWRkaW5nIGluc2lkZSBodW1pZGl0eSB0
byB0aGUgMS1XaXJlIHdlYXRoZXIgc3RhdGlvbi4gVXNlIG9mIGFuIGluLWxpbmUgY291cGxlciB3
aWxsIHBlcm1pdCBtdWx0aXBsZSBodW1pZGl0eSBzZW5zb3JzIHRvIGJlIHNlcmllcyBjb25uZWN0
ZWQgb24gYSBzaW5nbGUgMS1XaXJlIG5ldHdvcmsgY2FibGUuDQ1UaGUgaHVtaWRpdHkgc2Vuc29y
IG1vZHVsZSB3aWxsIGJlIGF2YWlsYWJsZSBmb3IgJDIwIGVhY2ggYXMgYSBkZXZlbG9wZXIvZXhw
ZXJpbWVudGVyknMga2l0LiANAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA





AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA/v8AAAQAAgAAAAAAAAAAAAAAAAAAAAAAAQAA
AOCFn/L5T2gQq5EIACsns9kwAAAAwAEAABIAAAABAAAAmAAAAAIAAACgAAAAAwAAANgAAAAEAAAA
5AAAAAUAAAAAQAABgAAAAwBAAAHAAAAGEAAAgAAAAsAQAACQAAAEgBAAASAAAAVAEAAAoAAABw
AQAACwAAAHwBAAAMAAAAiAEAAA0AAACUAQAADgAAAKABAAAPAAAAqAEAABAAAACwAQAAEwAAALgB
AAACAAAA6f0AAB4AAAAwAAAAQW5ub3VuY2luZyB0aGUgMS1XaXJl74OiIEh1bWlkaXR5IHNlbnNv
ciBtb2R1bGUAHgAAAAEAAAAAbm5vHgAAABMAAAABQcmVmZXJyZWQgQ3VzdG9tZXIAch4AAAABAAAA
AHJlZh4AAAABAAAAAHJlZh4AAAALAAAATm9ybWFsLmRvdAB1HgAAABMAAAABQcmVmZXJyZWQgQ3Vz
dG9tZXIAch4AAAACAAAANQBlZh4AAAATAAAATWljcm9zb2Z0IFdvcmQgOC4wAHJAAAAAAJZ69gcA
AABAAAAAADyK2WFLwAFAAAAAAOLeV1JLwAFAAAAAAISxhmNLwAEDAAAAAQAAAAMAAADRAAAAAwAA
AKgEAAADAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAP7/AAAEAAIAAAAAAAAAAAAAAAAAAAAAAAAAIAAAAC1c3VnC4b
EJOXCAArLPmuRAAAAAXVzdWcLhsQk5cIACss+a50AQAAMAEAAAwAAAABAAAAaAAAAA8AAABwAAAA
BQAAAJQAAAAGAAAAnAAAABEAAACkAAAAFwAAAKwAAAALAAAAtAAAABAAAAC8AAAAEwAAAMQAAAAW
AAAAzAAAAA0AAADUAAAADAAAABABAAACAAAA6f0AAB4AAAAZAAAATWljcm9uIEVsZWN0cm9uaWNz
LCBJbmMuAABXAAMAAAAJAAAAAwAAAAIAAAADAAAAtwUAAAMAAAAxFQgACwAAAAAAAAALAAAAAAAA
AAsAAAAAAAAACwAAAAAAAAAeEAAAAQAAADAAAABBbm5vdW5jaW5nIHRoZSAxLVdpcmXvg6IgSHVt
aWRpdHkgc2Vuc29yIG1vZHVsZQAMEAAAAgAAAB4AAAAGAAAAVGl0bGUAAwAAAAEAAAAAAFABAAAE
AAAAAAAAACgAAAABAAAAUgAAAAIAAABaAAAAAwAAALIAAAACAAAAAgAAAAoAAABfUElEX0dVSUQA
AwAAAAwAAABfUElEX0hMSU5LUwACAAAA6f0AAEEAAABOAAAAewA4ADgARAA3AEMAOAA0ADQALQBC
ADcANAA2AC0AMQAxAEQANAAtADgAMAAzAEIALQAwADAANQAwAEQAQQA3ADMANABCADYAQgB9AAAA
AABBAAAAlAAAAAYAAAADAAAAUQBYAAMAAAAAAAAAAwAAAAAAAAAADAAAABQAAAB8AAAAtAAAAaAB0
AHQAcAA6AC8ALwB3AHcAdwAuAGkAYgB1AHQAdABvAG4ALgBjAG8AbQAvAHcAZQBhAHQAaABlAHIA
LwBoAHUAbQBzAGUAbgBzAG8AcgAuAHAAZABmAAAAAAAfAAAAAQAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAABAAAAAgAAAAMAAAAEAAAABQAAAAYAAAAHAAAACAAAAAkAAAD+////CwAA
AAwAAAANAAAADgAAAA8AAAAQAAAAEQAAAP7///8TAAAAFAAAABUAAAAWAAAAFwAAABgAAAAZAAAA
/v///xsAAAAcAAAAHQAAAB4AAAAfAAAAIAAAACEAAAD+////IwAAACQAAAAlAAAAJgAAACcAAAAo
AAAAKQAAAP7////9////LAAAAP7////+/////v///////////////////////////////////
//
//
//
//
//
////////////////1IAbwBvAHQAIABFAG4AdAByAHkAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAWAAUB//////////8DAAAABgkCAAAAAADAAAAAAAAARgAAAAAg
1CVKY0vAATAtc5ZjS8ABLgAAAIAAAAAAAAAARABhAHQAYQAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAoAAgH///////////////8AAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAKAAAAABAAAAAAAAAxAFQAYQBiAGwAZQAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAADgACAAEAAAD/
/////////wAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAABIAAAAAEAAAAAAAAAFcA
bwByAGQARABvAGMAdQBtAGUAbgB0AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAaAAIBBgAAAAUAAAD/////AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAB4SAAAAAAAABQBTAHUAbQBtAGEAcgB5AEkAbgBmAG8AcgBtAGEAdABpAG8AbgAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAACgAAgH///////////////8AAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAaAAAAABAAAAAAAAAAFAEQAbwBjAHUAbQBlAG4AdABTAHUAbQBtAGEAcgB5
AEkAbgBmAG8AcgBtAGEAdABpAG8AbgAAAAAAAAAAAAAAAOAACAQQAAAD//////////wAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAACIAAAAAEAAAAAAAAAAAEAQwBvAG0AcABPAGIAagAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAASAAIBAgAAAAcA
AAD/////AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAGoAAAAAAAAATwBi
AGoAZQBjAHQAUABvAG8AbAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAABYAAQD///////////////8AAAAAAAAAAAAAAAAAAAAAAAAAAAAAADAtc5ZjS8ABMC1zlmNLwAEA
AAAAAAAAAAAAAAABAAAA/v///
//
//
//
//
//
//
//
//
/////////////wEA/v8DCgAA/////wYJAgAAAAAAwAAAAAAAAEYYAAAATWljcm9zb2Z0IFdvcmQg
RG9jdW1lbnQACgAAAE1TV29yZERvYwAQAAAAV29yZC5Eb2N1bWVudC44APQ5snEAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAA

------=_NextPart_000_000E_01C04DFE.EA143A40--

Subject: Re: Fw: [weather] Humidity Sensor
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Tue, 14 Nov 2000 08:25:34 -0600
X-Message-Number: 4

Great, DS2438 support suggests that a BP sensor based on the same AD =
converter shouldn't be hard to add to the T238. I still have the =
schematic and board layout for a DS2438 based BP sensor if you guys need =
it.

Rich - Wn0x

>>> crb5@qwest.net 11/14/00 06:51AM >>>
This is a message with attachment that gives some information on the
humidity sensor and on the barometer for the 1-Wire weather station. We
have a beta version of the humidity and Will is working with it now so =
that
the T-238 will be able to interface with it.

Russ
kb0tvj

> > -----Original Message-----
> > From: Dan Awtrey [SMTP:Dan.Awtrey@dalsemi.com]=20
> >
> > Please see the attached document concerning the availability of the
> > humidity sensor which will be posted to the web site soon. Basically,
> > Dallas Semiconductor has decided to enhance the Humidity iButton by
> > adding a light sensor. The revised product introduction schedule has
> > been pushed out to April. Meanwhile a humidity module similar to that
> > discussed in the recent article in Sensors magazine will be available
> > Dec 15th at $20.
> >
> > The barometer is still stalled for delivery of sensing elements.
> >
> > Thanks for your interest in Dallas Semiconductor products.
> >
> > Dan Awtrey   Staff Engineer
> > Dallas Semiconductor   Phone: 972-371-6297
> > Building C   FAX: 972-371-3715
> > 4401 S. Beltwood Pkwy.   E-mail: dan.awtrey@dalsemi.com=20
> > Dallas, TX 75244-3292
> > http://www.ibutton.com=20
> >

Subject: Re: Fw: [weather] Humidity Sensor
From: William Beals <will@beals5.com>
Date: Tue, 14 Nov 2000 18:59:01 -0700
X-Message-Number: 5

Rich:

It is good that they use the same chip from a pure driver standpoint. It
is a real pain in the neck when you see two of them on the bus to figure
out which is which. I have that fun now trying to distinguish between rain
sensors and wind speed sensors! I guess every silver lining needs a
cloud--oh well :-).

will

Great, DS2438 support suggests that a BP sensor based on the same AD
converter shouldn't be hard to add to the T238. I still have the schematic
and board layout for a DS2438 based BP sensor if you guys need it.

83. [wxsig] wxsig digest: November 08, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:44:05 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120569-2000.11.20-13.03.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Wednesday, November 08, 2000.

1. RE: APRS WX information
2. RE: APRS WX information
3. RE: APRS WX information
4. Where do I get the sensor kit?
5. RE: Where do I get the sensor kit?

Subject: RE: APRS WX information
From: "Antonio Sergio Sena" <aserginho@hotmail.com>
Date: Wed, 08 Nov 2000 12:05:30 WET
X-Message-Number: 1

>APRS is the network, so as long as you can get into and out of the network,
>you should be all set.
>
>To get data into the network, your data provider only needs to be able to
>transmit data on 144.39MHz using a TNC.
>
>The "network" can be point to point, through digipeaters, or through the
>internet, depending on your needs and what connections are available to
>you. The internet connectivity is neat as you can get data from wherever
>in the world someone has a radio with an internet connection and can relay
>the data.
>
>TAPR has an email reflector for APRS in general called aprsig for general
>APRS stuff and there is a good spec for the APRS protocol itself in TAPRs
>FTP area.
>
>Not much of an introduction, but hopefully a starter on where to get
>information. If you have more questions, feel free to post them here.
>
>will
>

Hello Will,

Thanks for the explanation, but i already have a network running here, with
several digi's working.
What i want to know, is how the chatastrofe, disaster, meteorological
events, or how do you call it.... works in conjuntion with APRS.
I know that there are some USA National networks receiving data from the
APRS Ham network for complement info.
What can WX prevention, forecasting, gain with APRS ??
This is what i want to know.
I am leading this question oversea's to USA, because here in Europe,
everything is a little "slow"...

Thanks for everything !

73 de CT2GPW

****
Antonio Sergio Sena
BEng Electrical & Electronic Engeneering
Heriot-Watt University - Edinburgh
www.qsl.net/ct2gpw

_____
Get Your Private, Free E-mail from MSN Hotmail at http://www.hotmail.com.

Share information about yourself, create your own public profile at
http://profiles.msn.com.

Subject: RE: APRS WX information
From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Wed, 08 Nov 2000 06:33:37 -0600
X-Message-Number: 2

Antonio Sergio Sena wrote:
>
> Thanks for the explanation, but i already have a network running here, with
> several digi's working.
> What i want to know, is how the chatastrofe, disaster, meteorological
> events, or how do you call it.... works in conjuntion with APRS.
> I know that there are some USA National networks receiving data from the
> APRS Ham network for complement info.
> What can WX prevention, forecasting, gain with APRS ??
> This is what i want to know.
> I am leading this question oversea's to USA, because here in Europe,
> everything is a little "slow"...

Forecasting cannot directly or currently benefit from APRS, expect in
those National Weather Service offices that use APRS as an adjunct to
spotting of severe weather events, most often with their own local
spotters. We often refer to this as "Now-cast". Prevention benefits
from seeing an event displayed and allowing the users "downstream" of
the event to prepare for it. I often use it here to see weather trends,
and tell my kids how to dress for the day... our TV station weather
people are pretty bad, and I use now-casts to help with forecasts...

Here, we have a number of stations with weather hardware associated with
them. These stations can thus input their weather observations into the
network stream. The APRS servers acknowledge them like everything else,
and make those data available to the net. If your internet access point
(I-Gate) sees the data and downloadss it to your local network, you will
see it too.

Dale Hugeley works at the NWS here. He has a system that ports severe
weather messages to the APRS server stream. Most of what we get are
county alerts that will light up a county outline with the appropriate
color for the severity of the alert, but I have also seen weather icons
for severe thunderstorm and tornado associated with his system. I have
appreciated those when they were in my area, as I monitor APRS, radas
and the local nets as much as possible in the time of bad weather.

Hope this is helpful. Let me know if I can answer other questions for
you?

73, gerry
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University   979.458.4020 (Phone) -- 979.847.8578 (Fax)

Subject: RE: APRS WX information
From: "Antonio Sergio Sena" <aserginho@hotmail.com>
Date: Wed, 08 Nov 2000 14:53:15 WET
X-Message-Number: 3

>Dale Hugeley works at the NWS here. He has a system that ports severe
>weather messages to the APRS server stream. Most of what we get are
>county alerts that will light up a county outline with the appropriate
>color for the severity of the alert, but I have also seen weather icons
>for severe thunderstorm and tornado associated with his system. I have
>appreciated those when they were in my area, as I monitor APRS, radas
>and the local nets as much as possible in the time of bad weather.

Hello Gerry,

Thanks for the info.
Do you mean that the icons are automatically changed when there is trouble
?? this a feature of the gates, the software you use, or the WX APRS
stations spreaded ??

This is quite interesting. This is the info i was looking for.
More will be tremendously appreciated !!
Thanks!

73 de Sena, CT2GPW

****
Antonio Sergio Sena
BEng Electrical & Electronic Engineering
Heriot-Watt University - Edinburgh
www.qsl.net/ct2gpw

_____
Get Your Private, Free E-mail from MSN Hotmail at http://www.hotmail.com.

Share information about yourself, create your own public profile at
http://profiles.msn.com.

Subject: Where do I get the sensor kit?
From: John Wood <john@otherlife.net>
Date: Wed, 08 Nov 2000 09:56:34 -0800
X-Message-Number: 4

Hello group:
    I have just ordered the TAPR T-238 kit and have been promised
delivery
in January. Then I went to the iButton site to order the wind gage,
etc. only
to be unable to find it. Can anyone tell me how to order it?

Thanks,

--
John Wood, KF6HFA, 510.234.0527, john@otherlife.net

Subject: RE: Where do I get the sensor kit?
From: William Beals <will@beals5.com>
Date: Wed, 8 Nov 2000 20:19:32 -0700
X-Message-Number: 5

John:

Dallas recently quit selling the weather sensor. The TAPR page announces
this in the big yellow box. Before you panic too much, another company has
announced that they will be making the weather station, but have not
announced the date yet, there are a bunch of us eagerly awaiting the
announcment of the date.

If this is a BIG problem (and I could see how it could be), I think you
could call back and explain your situation. The boards are temporarily
backlogged (hence your January delivery).

will

-----Original Message-----
From: John Wood [SMTP:john@otherlife.net]
Sent: Wednesday, November 08, 2000 10:57 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Where do I get the sensor kit?

Hello group:
    I have just ordered the TAPR T-238 kit and have been promised
delivery
in January. Then I went to the iButton site to order the wind gage,
etc. only
to be unable to find it. Can anyone tell me how to order it?

Thanks,

--
John Wood, KF6HFA, 510.234.0527, john@otherlife.net

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

84. [wxsig] wxsig digest: August 31, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:42:43 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120570-2000.11.20-13.03.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Thursday, August 31, 2000.

1. Dallas Semi Weather Stations for sale?

2. RE: 4800 Baud
3. Re: Initializing sensor ID's in T238 via software
4. Re: Initializing sensor ID's in T238 via software
5. Problems with T238 and KPC3+ v 8.3 GPS port
6. May be offline
7. RE: Problems with T238 and KPC3+ v 8.3 GPS port

Subject: Dallas Semi Weather Stations for sale?
From: VTuff59795@aol.com
Date: Thu, 31 Aug 2000 07:18:21 EDT
X-Message-Number: 1

Hi everyone,
            does anyone have a complete station for sale? I missed the cut
off date by two days....

Regards,

Vic

Subject: RE: 4800 Baud
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 31 Aug 2000 08:36:30 -0500
X-Message-Number: 2

Not a HUGE priority, just a wish!

>>> will@beals5.com 08/30/00 10:49PM >>>
Rich:

Your wish is not wet. I have been trying to cut down on the number of=20
options and such just to keep the user interface simple and selecting=20
unique baud rates no matter what the mode was an area that I thought I=20
could get away with--until now.

Changing baud rates isn't quite as trivial as I would like. The data =
that=20
is dispatched to the UART is done in in bursts every 100ms, so I cannot=20
queue up more than 100ms of characters each timer tick. Good news is =
that=20
going up in baud rate is a LOT easier than going down. Changing the =
baud=20
rate will be the easy part, adding all the user interface screens and=20
testing them will be the pain.

I will add your request to my add-soon feature list.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]=20
Sent: Wednesday, August 30, 2000 11:47 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] 4800 Baud

I picked up a used Kantronics KPC (1) for use with my Wx station the =
other=20
day. This unit started life as one of the first Kantronics TNC's and =
was=20
upgraded to a KPC II later on.

Unfortunately, the darn thing doesn't support 4800 baud, which makes it=20
un-usable with my T238! I think I read that he T238 was set for 4800 =
baud=20
so it was compatible with most GPS stuff. I wish the T238 had a 9600 =
baud=20
setting so it would be compatible with most everything else I own!

Am I all wet on this?

You are currently subscribed to wxsig as: wmbeals@compuserve.com=20
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---

Subject: Re: Initializing sensor ID's in T238 via software
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 31 Aug 2000 08:41:07 -0500
X-Message-Number: 3

Absolutely not a problem, I have other things (Barometric Pressure) I =
would rather have. Just thinking out loud!

>>> will@beals5.com 08/30/00 11:22PM >>>
Rich:

This seemed to me like a really big pain. However, compared to =
repelling=20
down the roof of a house, maybe it isn't so bad. Entering the data =
would=20
just be a big user-interface pain, but the bigger issue is that any =
data=20
entered manually is subject to error and in the case of wind direction,=20
there is no way of verifying it other than random errors when the =
magnet=20
was exactly over that sensor and I got no reading. Still probably =
better=20
than repelling!

I will add it to the list, but the effort will likely put it not in the=20
currently-being-worked release.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]=20
Sent: Wednesday, August 30, 2000 3:53 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Initializing sensor ID's in T238 via software

I wouldn't mind a way of entering these values manually through the =
menus.=20
 It would prevent some climbing. For that matter, it would be nice to =
have=20
the T238 store configurations for more than 1 station.   Maybee station =
1=20
to 5.

>>> Rickey_Hampton@PremierInc.com 08/30/00 04:37PM >>>
Hi, folks.

My wife (fairly new license, KG4GMJ) just finished building her first =
kit;=20
a
TAPR T-238. (NICE JOB GUYS! It took a week to convince her she could do
it, but now the kit's going in a clear case so she can show it off.) So
far, it works great, but there is one problem.
..

You are currently subscribed to wxsig as: wmbeals@compuserve.com=20
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---

Subject: Re: Initializing sensor ID's in T238 via software
From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Thu, 31 Aug 2000 12:00:02 -0400
X-Message-Number: 4

Everyone,

I apologize for the long post, but a problem cropped up with identifying the
sensor ID's via the ini.txt file used by the computer software. I posted
this to the Ibutton group, but it may also apply to those who initially set
the wx station up on a computer and are later migrating to the T-238 as I am

doing. Hopefully this will prevent a lot of tower climbing, or in my case, roof rappelling.

Will: If loading the ID's this way works the way I hope it does, I'll document it for you to include in your manual. (BTW, I got your reply, but haven't had time to thoroughly digest it yet. Though encouraging, I'll probably need a few pointers on using the development software when I get to that point. That's a few days away, so I'll let you know....)

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

-----Original Message-----
From: Hampton, Rickey
Sent: Thursday, August 31, 2000 11:47 AM
To: 'arne@henriksens.net'; Dan Awtrey
Cc: 'weather@ibutton.com'
Subject: RE: [weather] Sensor ID's

Arne, et al,

I hate to be the bearer of bad news, but Dan Awtrey was correct. The listing of the ID's in the ini.txt file is not such that the first listing is the ID for the "North" DS2401 chip. (Dan, FYI: Opening the Reference window in the Weather software gives you a blank entry, not the ID of the "North" DS2401 chip as you thought.) The good news is, I was also able to find another way to get ALL the ID's and their correct correlation, though I'm not sure how you can automate the process just yet.

[A short disclaimer: I do not now use Arne's program, not because I don't like it, but because my ultimate goal is to get the weather station off my PC all together and on a TAPR T-238 controller connected to the amateur radio net. The PC was an interim step until I got the T-238 built. I may try later to send the data to the PC for logging, at which time I intend to use Arne's software.]

I went home last night and called up both the I-button32 Viewer and Weather v2.05 programs, in that sequence. (The reverse sequence does not work due to network conflicts.) The I-button32 Viewer will identify all the ID's on the 1-Wire net, INCLUDING THE CHIPS IN THE RAIN GAUGE!!! The I-button viewer may not list any or all of the DS2401's due to the way they are connected through the DS2406 switch chip, but they will be listed in the ini.text file for the Weather program. The I-button viewer WILL show the counter chips in both the anemometer and rain gauge, as well as the switch chips in the wind vane and rain gauge. Since Dan was able to identify the chips in my ini.txt file for me, I was able to identify the chips in the rain gauge through elimination. Clicking on the ID and then the "VIEW" button brings up a window that will allow you to see the counters actually counting provided the wind is blowing and it is raining. (I was lucky last night. I had light rain with light and variable winds. All sensors were actively reporting changes!) You may have to select Memory Page 15 in the viewer to see the counts actually changing. With all the chips now ID'ed, I turned my attention to identifying the "orientation" of the DS2401 wind direction sensors.

With the print-out of the ini.txt file in hand, I called up the Help screen in the Weather v2.05 program and rearranged all the windows so I could simultaneously see the chip ID's in the Viewer, the wind speed and direction indicators in the Weather program and the top of the Help window. As the sensors are polled, their ID's appear at the very top of the Help screen. By watching the wind direction indicator, I was able to correlate the display to the various '2401 direction sensors. (This part of the process took about 45 minutes.)

>From this point, if I understand Arne's software, all you would have to do is rearrange the ID's in the ini.txt file and all should be OK once again.

So, below is the data I started with, and what I ended with:

====From ini.txt====
AF0000044A63C101
EB0000044A63B501
6E0000044A63B201
7F0000044A63AF01
260000044A63AC01
A10000044A63B801
F80000044A63BB01

130000044A63BE01
E0000000011A941D
D90000001532EA12
CB00000040583910
================

Here was my presumed order of the wind direction sensors after Dan was kind
enough to ID all the chips listed in my ini.txt file. Arne, I believe this
was your assumption as well:
=============PRESUMED ORDER============================
AF0000044A63C101 - DS1990A(DS2401) - wind direction sensor - North
EB0000044A63B501 - DS1990A(DS2401) - wind direction sensor - North East
6E0000044A63B201 - DS1990A(DS2401) - wind direction sensor - East
7F0000044A63AF01 - DS1990A(DS2401) - wind direction sensor - South East
260000044A63AC01 - DS1990A(DS2401) - wind direction sensor - South
A10000044A63B801 - DS1990A(DS2401) - wind direction sensor - South West
F80000044A63BB01 - DS1990A(DS2401) - wind direction sensor - West
130000044A63BE01 - DS1990A(DS2401) - wind direction sensor - North West
E0000000011A941D - DS2423 - wind speed counter
D90000001532EA12 - (DS2407)(DS2406) - addressable switch for wind direction
CB00000040583910 - DS1920(DS1820) - temperature sensor
===

After looking in the I-button32 Viewer, I was able to identify these three
additional ID's;
=========Other devices ID'ed in Ibutton Viewer=========
0E0000000F6EB812 - (DS2407)(DS2406) - addressable switch for rain gauge
5F00000000F0EE1D - DS2423 - tilt bucket counter in rain gauge
DD000001AFFA2F09 - DS1982 (DS2502) - 1 kbit Add-Only Memory inside the
DS9097U-009 Universal Serial Port Adapter
===

Be watching the Weather indicators and the ID's flashing up at the top of
the Weather Help screen, I was able to correlate the ID's with the correct
directions. Note that, unfortunately, the list does NOT begin with the
"North" sensor in my installation!
=============OBSERVED ORDER============================
AF0000044A63C101 - DS1990A(DS2401) - wind direction sensor - South West
EB0000044A63B501 - DS1990A(DS2401) - wind direction sensor - West
6E0000044A63B201 - DS1990A(DS2401) - wind direction sensor - North West
7F0000044A63AF01 - DS1990A(DS2401) - wind direction sensor - North
260000044A63AC01 - DS1990A(DS2401) - wind direction sensor - North East
A10000044A63B801 - DS1990A(DS2401) - wind direction sensor - East
F80000044A63BB01 - DS1990A(DS2401) - wind direction sensor - South East
130000044A63BE01 - DS1990A(DS2401) - wind direction sensor - South
E0000000011A941D - DS2423 - wind speed counter
D90000001532EA12 - (DS2407)(DS2406) - addressable switch for wind direction
CB00000040583910 - DS1920(DS1820) - temperature sensor
===

I hope this helps everyone. While it may be a bit of a pain to ID your
sensors this way, it sure beats deinstalling the station and reinitializing
everything. In my case, I don't have to break out the rappelling gear to
get on top of my house.

Rick Hampton, WD8KEL
Manager, Operations Support
800.825.1786 Ext. 5476

Subject: Problems with T238 and KPC3+ v 8.3 GPS port
From: John Vause <jdv@iglou.com>
Date: Thu, 31 Aug 2000 21:54:06 -0400
X-Message-Number: 5

Anyone having problems getting a KPC3+ with v.8.3 firmware to accept
data from the T238 on the soft serial port (the GPS port)?

I've set the KPC3+ "GPSPORT 2400 NORMAL NOCHECK", set the KPC3+
"GPS 2 @" but I cannot get data into the LT 2 buffer.
The tnc will accept the PEET format data (if I set the KPC3+ "GPS 2 !!")
and stuff it in the LT 2 buffer.

The serial cable is good.

I have gone as far as hacking the UART.ASM source code and recompiled
the WX08 software (Yes I have the software development

programming tools - very handy) so that TNC-DIR and COMPUTER format
data are output at 2400 baud from the T238 and set the KPC3+ "GPS 2 _"
but I still can't get the KPC3+ to accept the data on the GPS port.

I've set the T238 to the various output modes and checked the outputs
using HyperTerminal. The data is there. The KPC3+ does not accept the
data.

The KPC3+ will accept data from my Garmin II+ and 12CX properly on
the GPS port.

I'm stumped. :-(

73

--
* John Vause KF4ERV jdv@iglou.com   *
--

Subject: May be offline
From: William Beals <will@beals5.com>
Date: Thu, 31 Aug 2000 22:26:18 -0600
X-Message-Number: 6

Folks:

I may be offline for a week. I am taking off for the weekend and then a
business trip for the week thereafter. I'll try to get access to my
personal email using a work laptop, but am not sure if it will work yet.
 Don't give up on me if you hear nothing for the week!

will

This message sent using 100% recycled Electrons
(Minimum 30% post-consumer content)

Will Beals
will@beals5.com
15014 East Idaho Place
Aurora, CO 80012-4740
303-755-0293

Subject: RE: Problems with T238 and KPC3+ v 8.3 GPS port
From: William Beals <will@beals5.com>
Date: Thu, 31 Aug 2000 22:31:56 -0600
X-Message-Number: 7

John:

It appears that the LTP mode is unique in that it requires a CR-LF to
terminate the string correctly instead of the more normal CR-only. I made
a special cut for someone to test this theory and it seems to have fixed
the problem. I'll release this change in the next cut.

will

-----Original Message-----
From: John Vause [SMTP:jdv@iglou.com]
Sent: Thursday, August 31, 2000 7:54 PM
To: TAPR WX Special Interest Group
Cc: William Beals
Subject: [wxsig] Problems with T238 and KPC3+ v 8.3 GPS port

Anyone having problems getting a KPC3+ with v.8.3 firmware to accept
data from the T238 on the soft serial port (the GPS port)?

I've set the KPC3+ "GPSPORT 2400 NORMAL NOCHECK", set the KPC3+
"GPS 2 @" but I cannot get data into the LT 2 buffer.
The tnc will accept the PEET format data (if I set the KPC3+ "GPS 2 !!")
and stuff it in the LT 2 buffer.

The serial cable is good.

I have gone as far as hacking the UART.ASM source code and recompiled
the WX08 software (Yes I have the software development
programming tools - very handy) so that TNC-DIR and COMPUTER format
data are output at 2400 baud from the T238 and set the KPC3+ "GPS 2 _"
but I still can't get the KPC3+ to accept the data on the GPS port.

I've set the T238 to the various output modes and checked the outputs
using HyperTerminal. The data is there. The KPC3+ does not accept the
data.

The KPC3+ will accept data from my Garmin II+ and 12CX properly on
the GPS port.

I'm stumped. :-(

73

--
* John Vause KF4ERV jdv@iglou.com   *
--

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

85. [wxsig] wxsig digest: October 19, 2000

From: "Edgar Brown, N6OU" <yungthor@mediaone.net>
Date: Mon, 20 Nov 2000 10:43:55 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120571-2000.11.20-13.03.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR WX Special Interest Group Digest for Thursday, October 19, 2000.

1. RE: DS1994 Help
2. RE: DS1994 Help

Subject: RE: DS1994 Help
From: "Bob" <rg_davis@email.msn.com>
Date: Thu, 19 Oct 2000 11:04:26 -0600
X-Message-Number: 1

Can anybody tell me why some of the email messages I receive from this
service indicate there is an "Attachment", when there is no Attachment? It
doesn't happen on other messages.

bob/kd7cm

----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, October 18, 2000 9:01 PM
Subject: [wxsig] RE: DS1994 Help

> Bill:
>
> If you have confirmed that you have at least version 1.10.0 of the
> firmware, as part of the startup process it goes out and looks for the ID
> of the DS1994. If it finds that ID the only way for it to fail is to have
> a date code that is less than 1/1/00. The best two things I can check is
> to make really sure you have a solid connection from the T238 to the
DS1994
> and make sure the time/date is later than 1.1.00.
>
> If you can, measure the voltages right at the DS1994. With a volt meter
> you should mostly see 5V and the occasional dip to something less as the
> voltmeter tries to deal with the data pulses.
>
> Lemme know if you find out anything intereseting.
>
> will
>
> -----Original Message-----
> From: Bill Hosking [SMTP:billh@inficad.com]

> Sent: Friday, October 13, 2000 7:56 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] DS1994 Help
>
> I have a puzzlement here, or I'm just missing a step...
> I just installed a 1994 RTC in my T238 (Thanks to Rich's help/advice)
>
> With the T238 off and RJ connector connected to my laptop, the TMEX
program
> immediately detected the ibutton and allowe me to set it. By the way, I
> used the 'non-inverted' rj11 phone cord.
>
> I loaded version 10 into T238 and turned it on with wx sensors plugged
back
> on. I expected it to automatically find/recognize the RTC - it didn't.
>
> Rest of version 10 plays just fine.
>
> Do I have to direct the T238 to find the 1994 like I did with the rest of
> the sensors??
>
> thanks
> Bill W7JSW
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
>

>
>
> ---
> You are currently subscribed to wxsig as: rg_davis@email.msn.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

Subject: RE: DS1994 Help
From: William Beals <will@beals5.com>
Date: Thu, 19 Oct 2000 21:43:22 -0600
X-Message-Number: 2

Bob:

I get the same thing. I think it is based of the senders email using a
character set that is not recognized by your email package. As you can see
below I got your email as an attachment and I suspect it is because my
email program does not know the character set "windows-1252". As with
things like JPEG files and such, the email package just makes a file out of
it and lets the OS determine the reader for it.

This is all a guess, but so far it has passed my sanity checks.

will

-----Original Message-----
From: Bob [SMTP:rg_davis@email.msn.com]
Sent: Thursday, October 19, 2000 11:04 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: DS1994 Help

 << File: ATT00002.txt; charset = Windows-1252 >>

86. [wxsig] 1.10.2 testing

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Mon, 20 Nov 2000 12:59:53 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120572-2000.11.20-13.12.22--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

I've been testing 1.10.2 especially the various uart/ baud rate
combinations.
I think there is a minor display refresh bug when selecting alternate
baud rates.
When using arrow up or down to select another rate the display will fill
with garbage, sometimes 100% full black blocks. The easy recovery is to
"select" and "menu" back and try again. Please note I am using a home
brew board not the TAPR PCB. Has anyone else seen this?
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

87. [wxsig] URGENT: VIRUS FOUND ON THIS SIG!!!

From: kbrown@powerhouseproductions.com (Kevin Brown)
Date: Mon, 20 Nov 2000 13:12:57 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120573-2000.11.20-13.23.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My system detected a virus being sent out from Edgar. Considering most of
the emails are DIGEST messages from the sig that I do not subscribe to, I
presume that even he doesn't know he's sending them out. According to the
virus details, posted below this is an expected result. If you have
received the NAVIDAD.EXE from anywhere...YOU NEED TO CLEAN YOUR SYSTEM.

DETAILS FOLLOW:

TROJ_NAVIDAD.A
 Risk rating: Medium Risk
 Virus type: Trojan
 Destructive: N

Aliases:
W32/Navidad@M, W32.Navidad

Description:
This Internet worm propagates via Microsoft Messaging API (MAPI). It
responds to messages included in the user INBOX using the default MAPI
client and email. Every response will have RE: and the worm as an attachment
(NAVIDAD.EXE).

This worm also displays a message box upon execution and maps the opening of
Windows executables so that it is executed when the executable is called.

Solution:
Warning: Please delete the registry entries before running Trend antivirus.

Use this tool, FIX NAVI, to automatically clean your system registry and
delete the dropped file, WINSVRC.VXD.
Restart the computer.
Scan your system with Trend antivirus and delete all files detected as
TROJ_NAVIDAD.A.
As an alternative to using the tool is the following:

Click on Start|Find|Files or Folders.
Search for REGEDIT.EXE.
Rename REGEDIT.EXE to REGEDIT.COM. (Since the worm maps all executable files
to itself, you will need to do this to be able to run Regedit. After
cleaning your system, you can rename this file back to its original name.)
Run REGEDIT.COM.
In the left panel of the Registry Editor, click on the "+" at left of the
names to go to the registry below:
HKEY_CLASSES_ROOT\exefile\shell\open\
command
In the right panel, double-click on the entry with the data
(Default) =
"%systemdir%\WINSVRC.EXE"%1""%*"
where %systemdir% is the Windows system directory; e.g., \WINDOWS\SYSTEM for
Win 9x, and \WINNT\SYSTEM32 for NT/2K.
In the Edit window that appears, delete the entire first part of the string,
leaving behind "%1"%*".
As in step 5, go to the registry entry below:
HKEY_LOCAL_MACHINE\Software\Microsoft\
Windows\CurrentVersion\Run

Click on the entry below, then press "DELETE"
Win32BaseServiceMOD =
%systemdir%\WINSVRC.EXE
Go to the registry entry below:
HKEY_CURRENT_USER\Software\Navidad
Delete this key.
Reboot your system.
Scan your systen with Trend antivirus and then delete all files detected as
TROJ_NAVIDAD.A.
Rename REGEDIT.COM back to REGEDIT.EXE.
If you need further assistance with this solution, please send an email to
virus_doctor@trendmicro.com.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

88. [wxsig] Edgar Brown N6OU - virus warning

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Mon, 20 Nov 2000 19:55:35 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120632-2000.11.20-19.06.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Folks,

You probably worked it out already but look out for an email from the above
fellow. I got 22 emails from him via the reflector all of which had the
navidad virus attached.

Its easy to see (under outlook anyway) as it appears as a paperclip type
attachment and is called 'navidad.exe'.

Just make sure you don't run the program and that you delete the email from
both your inbox and deleted items folders.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

89. [wxsig] Re: wxsig digest: September 28, 2000

From: "Ken Oliver" <knoliver@netutah.com>
Date: Mon, 20 Nov 2000 18:14:12 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120638-2000.11.20-19.25.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What is all this you are flooding the TAPR WX list with??????????????????
Is it important to send this to all on list?

----- Original Message -----
From: Edgar Brown, N6OU <yungthor@mediaone.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Monday, November 20, 2000 11:43 AM
Subject: [wxsig] wxsig digest: September 28, 2000

TAPR WX Special Interest Group Digest for Thursday, September 28, 2000.

1. RE: DS 1994 clock chip
2. APRSWXNET info
3. RE: DS 1994 clock chip
4. Intermittent Data Tx
5. RE: Intermittent Data Tx

Subject: RE: DS 1994 clock chip
From: "Mark Phillips" <g7ltt@g7ltt.com>

Date: Thu, 28 Sep 2000 06:03:29 -0400
X-Message-Number: 1

The 'clip' looks like the motherboard battery holder. Have you noticed that
the button will only fit into the clip upside down which then causes a
conflict in the wiring standard? The legend on the clip says that the
contact at the top of the clip is + and bottom is - flying in the face of
the button legend.

----- Original Message -----
From: "Brian B. Riley" <brianbr@wulfden.org>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Wednesday, September 27, 2000 10:08 PM
Subject: [wxsig] RE: DS 1994 clock chip

>
> when you say "clip" are you talking about the iButton "blue dot" adapter
> with RJ11 on it or are you talking about the holder that is a PC Board
> mount similar to the thingy that is used on PC motherboards to hold
> batteries? If it is the latter, just solder it down on the prototyping
> area and run two "blue wire" patches to 1-wire bus and gnd.
>
> > -----Original Message-----
> > From: bounce-wxsig-15705@lists.tapr.org
> > [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of William Beals
> > Sent: Wednesday, September 27, 2000 10:06 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] RE: DS 1994 clock chip
> >
> >
> > Mark:
> >
> > Parallel. The best thing I've found is a telephone
> > double-adapter. You have to squeeze in the power connector a
> > bit, but it works nicely.
> >
> > As you saw on earlier posts today: DON'T SET THE WRITE
> > PROTECTION BIT!!!
> >
> > will
> >
> > -----Original Message-----
> > From: Mark Phillips [SMTP:g7ltt@g7ltt.com]
> > Sent: Wednesday, September 27, 2000 7:43 PM
> > To: TAPR WX Special Interest Group
> > Subject: [wxsig] DS 1994 clock chip
> >
> >
> > My button arrived today along with the ibutton 'clip' do I
> > just paralell it
> > up onto the 1 wire bus or is it serial?
> >
> > Mark Phillips, G7LTT/KC2ENI
> > New York, NY - 11103
> > 40' 45.781N 073' 54.472W
> > http://www.g7ltt.com
> >
> >
> >
> > ---
> > You are currently subscribed to wxsig as: wmbeals@compuserve.com
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: g7ltt@g7ltt.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

Subject: APRSWXNET info
From: "Russ Chadwick" <crb5@uswest.net>

Date: Thu, 28 Sep 2000 07:09:27 -0600
X-Message-Number: 2

I made some changes, corrected some errors, and added two new stations to APRSWXNET, which now has 8 stations. The changes I make on findu.com (to send the data) happen quickly. However, the changes to QCMS (to receive the data) happen much slower and should happen in the next day or so. When our symbols on the maps change from lower case to upper case, the change has taken place. So, for example, when my station near Denver changes from "ap001" to "AP001", that means the changes are in place. Henceforth, the stations will be in this upper case format. That's one of the changes that the QCMS people asked for.

Another change is that I took all of the position locations from findu.com. That way there is a common source of the location data. So anyone wishing to join this activity of monitoring the quality of your weather station data, just send me your callsign and I'll include you in the next change which will be in about a week.

Russ
kb0tvj

Subject: RE: DS 1994 clock chip
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 28 Sep 2000 11:12:10 -0500
X-Message-Number: 3

Yup, the clip is backwards. I don't know if other I-Button devices are =
the reverse of this but it is confusing. I wired my DS1994 backwards the =
first time because I assumed + to be the data side. For those of you who =
have the I-Button holder, there is a ground connection near the break-out =
grid that is handy, and you can take your 1-Wire bus input from pin 14 of =
J6. Be careful when you are counting pins as J6 is not numbered the same =
as a DIP package.

DO NOT check the write protection when setting the time on the DS1994 as =
you will NEVER be able to change that function again.

It is really cool being able to grab the time from this device. I could =
have set up a 9 volt battery as a backup, and still may, but this is a =
nice way not to have to reset the time when you have completely powered =
off.

Rich Beckwith - Wn0x

Subject: Intermittent Data Tx
From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 28 Sep 2000 11:18:15 -0500
X-Message-Number: 4

Will,=20

I am still working on the intermittent problem with my station not =
reporting. I verified that the computer port was getting the information. =
When I hooked up to the TNC port and ran it's output to another terminal =
session nothing would show up. After re-setting the T238 I would see data =
again.
Is the output to the PC parallel with the TNC? Does it run from a =
different port on the MAX232? I reseated the MAX232 and checked my solder =
connections in the area and so far this morning I am still reporting data. =
I have everything in place now to check the TNC port if it quits again =
and will let you know what I find.

Rich - Wn0x

Subject: RE: Intermittent Data Tx
From: William Beals <will@beals5.com>
Date: Thu, 28 Sep 2000 19:15:30 -0600
X-Message-Number: 5

Rich:

Exactly the same signals go to to the TNC and PC ports. The only
difference is the sex of the connector and swapping the Tx and Rx pins.
 That only purpose behind having two ports is to save a needed adapter and
having half of the users suggesting I chose the wrong one! As such, keep
in mind that you should not plug both a PC and TNC in at the same time.
 You'd end up shorting a few RS-232 signals together.

Lemme know what you find out. The fact that you don't see the data
dissapear coming out of the T238 is encouraging.

will

-----Original Message-----
From: Rich Beckwith [SMTP:Rich@dps.state.mo.us]
Sent: Thursday, September 28, 2000 10:18 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Intermittent Data Tx

Will,

I am still working on the intermittent problem with my station not
reporting. I verified that the computer port was getting the information.
 When I hooked up to the TNC port and ran it's output to another terminal
session nothing would show up. After re-setting the T238 I would see data
again.
Is the output to the PC parallel with the TNC? Does it run from a
different port on the MAX232? I reseated the MAX232 and checked my solder
connections in the area and so far this morning I am still reporting data.
 I have everything in place now to check the TNC port if it quits again and
will let you know what I find.

Rich - Wn0x

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

90. [wxsig] RE: 1.10.2 testing

From: "William Beals" <will@beals5.com>
Date: Mon, 20 Nov 2000 20:36:21 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120653-2000.11.20-21.46.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

I had this problem for a while during the code development, but thought I
found the bug (a simple one) and thought I fixed it. I will see if I can
get it again. What mode were you messing with? I know I was naughty in not
doing a complete test, I guess it bit me.

will

-----Original Message-----
From: bounce-wxsig-15707@lists.tapr.org
[mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Bill Ellis
Sent: Monday, November 20, 2000 12:00 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] 1.10.2 testing

I've been testing 1.10.2 especially the various uart/ baud rate
combinations.
I think there is a minor display refresh bug when selecting alternate
baud rates.

When using arrow up or down to select another rate the display will fill
with garbage, sometimes 100% full black blocks. The easy recovery is to
"select" and "menu" back and try again. Please note I am using a home
brew board not the TAPR PCB. Has anyone else seen this?
Bill N5ZTW

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

91. [wxsig] RE: Weather Stations data protocol

From: "William Beals" <will@beals5.com>
Date: Mon, 20 Nov 2000 20:36:18 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120654-2000.11.20-21.46.57--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rodrigo:

On the TAPR website go to the APRS pages and you will find the latest APRS
protocol spec. Read that and all shall be revealed. (or at least a lot will
be revealed anyway) I followed two of the protocols in there, the
positioned and positionless protocol. I also used the Peet protocol and
that is covered on Peets website.

will

-----Original Message-----
From: bounce-wxsig-15707@lists.tapr.org
[mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Rodrigo Sequeira
Matias
Sent: Monday, November 20, 2000 9:42 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Weather Stations data protocol

    Can anybody tell me if there is a standard on Weather stations data
protocol I can get to try developing my own software to decode some weather
data from those common weather stations.

Rodrigo

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

92. [wxsig] RE: 1.10.2 testing

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Tue, 21 Nov 2000 07:04:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120722-2000.11.21-07.16.36--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, I was testing the TNC LTP mode. I was doing this testing as you
said you did not have the time to. I thought some of us could "share"
the testing. I'm still in process of testing these features and will let
you know if I see any other anomalies.
Bill

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

93. [wxsig] Re: Mexican Weather station

From: Alan Heaberlin <w6amh@yahoo.com>
Date: Tue, 21 Nov 2000 19:04:09 -0800 (PST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Message-ID: <LYR15067-120831-2000.11.21-21.15.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Shrrah,
The weather station is working fine. My problem was
with incorrect connecting cables from the mother board
to the serial ports. The pin-outs were different.
The president of AAG personally contacted me to make
sure all my problems were resolved as did Dan Awtrey
the engineer for Dallas Semiconductor. Fortuantely I
found my problem before I had to ask them for too much
help.
I wil post a copy of this to the SIG so that anyone
else that may not know will be reassured that the WX
Sensor from AAG is a great deal and was delivered to
me overnight with a promise (by fax) of my check in
the mail!
Alan Heaberlin W6AMH
--- Shrrah Castillo <shrrah@yahoo.com> wrote:
> Hello Alan
>
> I am planing to buy a weather station from AAG, but
> a
> few days ago, I saw a mail from you at TAPR wxsig,
> and
> it seems that station was not working properly, so
> before buy I want to ask you if you get to work the
> station, thank you for your help.
>
> 73, Shrrah XE1TD
>
>
> _____
> Do You Yahoo!?
> Yahoo! Shopping - Thousands of Stores. Millions of
> Products.
> http://shopping.yahoo.com/

_____
Do You Yahoo!?
Yahoo! Shopping - Thousands of Stores. Millions of Products.
http://shopping.yahoo.com/

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

94. [wxsig] I think I killed my Weather Station

From: "James C. Biggerstaff" <jcbiggerstaff@iname.com>
Date: Wed, 22 Nov 2000 23:18:30 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121151-2000.11.22-23.32.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

While installing a 18s20 temperature sensor today, I accidentally reversed the
polarity of the 1-wire buss.
Boy am I embarrassed! The new 18s20 temp. sensor, installed five feet off the
ground, survived just fine. My weather station installed on a roof mounted mast
appears to not have faired as well. I immediately began to suspect the
protection diodes being zapped in the weather station but was surprised when I
didn't find the 1wire bus shorted. I used a DMM to check the bus and found 6.1k
ohms, reversing the leads gave a reading of 700K ohms. I have noted one other
symptom: I have a rather marginal power supply (wall wart) on my T-238 and with
the weather station portion of the bus connected, just after ever 5th blink of
the t-238 LED, the LCD backlight dims for about 1/4 second or so indicating a
significant current draw, I assume on the 1-wire buss. Does anyone have any
ideas? If the protection diodes remain the prime suspect, how do I identify
them in the weather station once it is removed from its lofty perch?

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

95. [wxsig] Re: I think I killed my Weather Station

From: "Russ Chadwick" <crb5@qwest.net>
Date: Wed, 22 Nov 2000 22:46:28 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121154-2000.11.22-23.57.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: James C. Biggerstaff <jcbiggerstaff@iname.com>
Subject: [wxsig] I think I killed my Weather Station

> While installing a 18s20 temperature sensor today, I accidentally reversed
the
> polarity of the 1-wire buss.

I assume that you mean you reversed the ground and data lines. I've done this many times without any problem. When you do it, the T-238 should indicate that the bus is shorted. Also, if the bus is open, it should indicate that no sensors were found.

I would check the wiring to the unit. One way that I do this is with the T-238. You should be able to tell when you have the bus open, shorted or connected to sensors by what message the T-238 shows. You might have to bring the unit down from the roof to completely check things out.

>I immediately began to suspect the
> protection diodes being zapped in the weather station but was surprised
when I
> didn't find the 1wire bus shorted. I used a DMM to check the bus and
found 6.1k
> ohms, reversing the leads gave a reading of 700K ohms. I have noted one
other
> symptom: I have a rather marginal power supply (wall wart) on my T-238
and with
> the weather station portion of the bus connected, just after ever 5th
blink of
> the t-238 LED, the LCD backlight dims for about 1/4 second or so
indicating a
> significant current draw, I assume on the 1-wire buss. Does anyone have
any
> ideas? If the protection diodes remain the prime suspect, how do I
identify
> them in the weather station once it is removed from its lofty perch?

Every 5 seconds the micro polls all the sensors and that pulls some extra current. You might think of putting a large capacitor across the supply so the voltage doesn't drop as much.

I doubt very much that anything is damaged. However, I know some electrostatic protection diodes have failed. It is right by the temperature sensor. I can describe it better after I look at one of mine, but check the wiring real good first.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

96. [wxsig] Re: I think I killed my Weather Station

From: "James C. Biggerstaff" <jcbiggerstaff@iname.com>
Date: Thu, 23 Nov 2000 00:58:34 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121192-2000.11.23-01.11.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Good news! But still embarrassed.
I wired the new temp sensor with crossed polarity. All devices are now reporting.
Russ thanks for the suggestion to go back and check the wiring. Sometimes it is easy to overlook the obvious.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

97. [wxsig] [Fwd: [aprshelp] Weather stations]

From: James Smith <k9apr@tawg.org>
Date: Thu, 23 Nov 2000 23:55:39 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: Billecb@aol.com
Message-ID: <LYR15067-121289-2000.11.23-23.09.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can someone help Bill on this.

--
73, James, K9APR
Chairman \ Coordinator
Tri-State APRS Working Group
http://www.tawg.org
APRS Webring http://www.tawg.org/join.htm

98. [wxsig] Weather data Glitch - sub-zero temps?????

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 24 Nov 2000 09:49:09 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121310-2000.11.24-09.00.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

He guys, the temps here went below zero F last night starting at about
0000z on 11/24/00 and when I went too look at the Findu graph there is
really something screwy ... I dunno if the temperature below zero is
coincidence. But would you take a ook at the graph and the raw weather
data and see what is going on???

72 de brian, n1bq

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418   NJQRP #274
QRP-L #2276   Zombie #768

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

99. [wxsig] Re: Weather data Glitch - sub-zero temps?????

From: "Russ Chadwick" <crb5@qwest.net>
Date: Fri, 24 Nov 2000 08:37:06 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121313-2000.11.24-09.49.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Brian B. Riley <brianbr@wulfden.org>
Subject: [wxsig] Weather data Glitch - sub-zero temps?????

> He guys, the temps here went below zero F last night starting at about
> 0000z on 11/24/00 and when I went too look at the Findu graph there is
> really something screwy ... I dunno if the temperature below zero is
> coincidence. But would you take a ook at the graph and the raw weather
> data and see what is going on???

Brian,

We noticed similar behavior in my station last week. It has been cold here
too, but Will thinks that the problem is that a change in the last version
of the software is screwing up the addressing. We are pretty sure that it
has nothing to do with the transducers.

Notice that you see funny things in all of the numbers. Wind speed goes to
99 and gust goes to 0 (clearly shows something is off because gust should
never be less than wind speed). Temperature goes to -68 and wind direction
goes to a multiple of 22.5 degrees. On occasion wind direction might be a
multiple of 22.5 degrees but not everytime as is happening here. So, the

conclusion is that everything is getting off and this is probably due to
addressing getting off. In my case the high and low temperatures on the
display were not affected, i.e. didn't indicate the -68.

Will is gone for Thanksgiving weekend. He did take the latest version of
the T-238 code with him and said that he would be looking at it closely to
see if he can see any problems with the addressing scheme. It probably
won't be obvious because this is an intermittent type of problem. If you
can find anything in the data that seems to trigger this, let us know.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

100. [wxsig] Re: Weather data Glitch - sub-zero temps?????

From: Steve Dimse <sdimse@earthlink.net>
Date: Fri, 24 Nov 2000 10:55:37 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121315-2000.11.24-10.09.42--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 11/24/00 10:37 AM Russ Chadwick (crb5@qwest.net) wrote:

>We noticed similar behavior in my station last week. It has been cold here
>too, but Will thinks that the problem is that a change in the last version
>of the software is screwing up the addressing. We are pretty sure that it
>has nothing to do with the transducers.
>
I was a little concerned it might be something to do with findu, but it
gets a clean bill of health, here is the string being sent, the error is
in the transmitted data:

N1BQ-3>APRS,VE2RTS-3*,WIDE:_11240247c135s099g000t-68e1w

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

101. [wxsig] Re: Dead Wx

From: John Vause <jdv@iglou.com>
Date: Fri, 24 Nov 2000 12:00:14 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121322-2000.11.24-11.11.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I pass along the following in the hope that it saves someone else
some headaches.

I recently experienced a failure of my Dallas WX station anemometer
(no wind speed indicated on my T238 readout). At first I thought the
DS9502 zener diode had been zapped by EMP (we had some severe
thunderstorms in the Louisville area this summer and some nearby
lightning strikes although I haven't been hit - yet).
After bringing the weather sensor head down off the antenna mast
(about 30' above ground level - as high
as my XYL will let me go) I replaced the DS9502 zener diode
with a 5.1v zener from Rat Shack and used the DalSemi Ibutton software
to check the wind speed counter. I noticed that it (wind speed) would
still lockup after a variable period of time and seemed to be subject
to vibration (sometimes). I inspected the reed switches and all
appeared to be intact so I chalked the wind speed counter lockups up
to user error and EMI from the antenna.
I then remounted the weather sensor head 3' lower on the antenna mast
and everything was golden - for about four days.
Then the wind speed counter locked up again so this time I
brought it down and decided to change the reed switch with one I
had bought at the Louisville Hamfest (buy some tiny reed switches if
you get the chance. You never know when you might need one.) As soon
as I unsoldered the original reed switch, one end of it fell off.
THe reed switch had broken (I think during a high wind storm we had
last summer) and would intermittently fail (shorted closed) which

caused the wind speed counter to appear locked up and not responding.
I should have realized that the wind speed counter showing increasing
counts when the reed switch was lightly tapped meant that it had
failed but I could see no physical damage (it had failed at one end
where the glass tube was bonded to the flat metal lead).

After replacing the reed switch, the anemometer has worked fine with no
lockups.

FWIW, when troubleshooting the One-Wire WX station, it MAY be time to
invest in a good magnifying glass. :-)

73

>>SNIP<<
> Kyle,
> You should check the DS9502 Electro Static Suppression Diode
> first. It shorts out the buss when doing it's job. If you lift one side
> and the wx station comes up, you found the problem.
> It will work without it, however the protection from whatever hit it the
> first time will lost!
>
> It is marked on the WS-1 pcb screening or look at the documents
> on at http://www.ibutton.com/weather/index.html for the pcb layout
>

--
* John Vause KF4ERV jdv@igloudot.com   *
* NOTE: email address altered for benefit of Spambots *
--

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

102. [wxsig] Re: Weather data Glitch - sub-zero temps?????

From: "Russ Chadwick" <crb5@qwest.net>
Date: Fri, 24 Nov 2000 14:48:07 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121337-2000.11.24-15.59.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian,

There might be two different problems with the T-238 software. Look at my
data for this afternoon (Friday)

http://64.34.101.121/cgi-bin/wx.cgi?call=kb0tvj-5&last=24

and you'll see temperatures of -68 when it is about 40 outside. Unlike your
data from this morning, my wind data seems reasonable even though the
temperature data is wrong.

Incidently, you can see these big temperature errors on the QCMS page too,
both hourly and daily.

Russ
kb0tvj

----- Original Message -----
From: Russ Chadwick <crb5@qwest.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Friday, November 24, 2000 8:37 AM
Subject: [wxsig] Re: Weather data Glitch - sub-zero temps?????

> ----- Original Message -----
> From: Brian B. Riley <brianbr@wulfden.org>
> Subject: [wxsig] Weather data Glitch - sub-zero temps?????
>
>
> > He guys, the temps here went below zero F last night starting at about
> > 0000z on 11/24/00 and when I went too look at the Findu graph there is
> > really something screwy ... I dunno if the temperature below zero is
> > coincidence. But would you take a ook at the graph and the raw weather
> > data and see what is going on???
>
> Brian,
>

> We noticed similar behavior in my station last week. It has been cold
here
> too, but Will thinks that the problem is that a change in the last version
> of the software is screwing up the addressing. We are pretty sure that it
> has nothing to do with the transducers.
>
> Notice that you see funny things in all of the numbers. Wind speed goes
to
> 99 and gust goes to 0 (clearly shows something is off because gust should
> never be less than wind speed). Temperature goes to -68 and wind
direction
> goes to a multiple of 22.5 degrees. On occasion wind direction might be a
> multiple of 22.5 degrees but not everytime as is happening here. So, the
> conclusion is that everything is getting off and this is probably due to
> addressing getting off. In my case the high and low temperatures on the
> display were not affected, i.e. didn't indicate the -68.
>
> Will is gone for Thanksgiving weekend. He did take the latest version of
> the T-238 code with him and said that he would be looking at it closely to
> see if he can see any problems with the addressing scheme. It probably
> won't be obvious because this is an intermittent type of problem. If you
> can find anything in the data that seems to trigger this, let us know.
>
> Russ
> kb0tvj
>
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

103. [wxsig] RE: Weather data Glitch - sub-zero temps?????

From: "William Beals" <will@beals5.com>
Date: Fri, 24 Nov 2000 15:01:44 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121338-2000.11.24-16.15.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

Russ had been seeing an occasional error similar to yours on his machine and
mine. I too thought it may be related to sub-zero temperatures, but there
are plenty of other circumstances where units that have failed also do work
just fine at sub-zero temperatures. Whatever the problem is, it appears to
be some kind of memory corruption issue as it takes out quite a lot of other
variables with it (wind speed, temperature, etc).

I am working on isolating the problem. Any additional information you can
provide when this happens is very useful. Did you notice the error flags
increment when this happened? Even though the averaged temperature got
trashed, did your min/max since midnight temperature readings get trashed?
What UART mode are you in? Information like this is very handy in tracing
where in the processing chain the data is flowing and where it broke down.
Initial data I have from Russ and myself seems to say that I am getting OK
data from the temperature sensor, but somewhere between the raw reading and
where I start doing data processing I start getting bad data.

I have this nasty feeling that somewhere a pointer I use is getting messed
up and tromping all over memory. That is what I am looking at now. I have
no less than 158 pointer references throughout my code and I am in the
process of looking at every single one to see if there might be a hole or
something.

will

-----Original Message-----
From: bounce-wxsig-15707@lists.tapr.org
[mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Brian B. Riley
Sent: Friday, November 24, 2000 7:49 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Weather data Glitch - sub-zero temps?????

He guys, the temps here went below zero F last night starting at about
0000z on 11/24/00 and when I went too look at the Findu graph there is
really something screwy ... I dunno if the temperature below zero is
coincidence. But would you take a ook at the graph and the raw weather
data and see what is going on???

72 de brian, n1bq

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418   NJQRP #274
QRP-L #2276   Zombie #768

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

104. [wxsig] RE: Weather data Glitch - sub-zero temps?????

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 24 Nov 2000 17:33:45 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121339-2000.11.24-16.45.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: William Beals
> Sent: Friday, November 24, 2000 17:02 PM

> Russ had been seeing an occasional error similar to yours on
  [snip]

> I am working on isolating the problem. Any additional
> information you can provide when this happens is very useful.
> Did you notice the error flags increment when this happened?
> Even though the averaged temperature got trashed, did your
> min/max since midnight temperature readings get trashed?
> What UART mode are you in? Information like this is very
> handy in tracin where in the processing chain the data is
> flowing and where it broke down. Initial data I have from
> Russ and myself seems to say that I am getting OK data
> from the temperature sensor, but somewhere between the
> raw reading and where I start doing data processing I
> start getting bad data.

  1 - error counts did not increment

  2 - hi-lo readings were OK

  3 - I am in LPT Mode

  4 - I am still running ver 1.09. I was going to go up to 1.10 this
weekend.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

105. [wxsig] RE: [Fwd: [aprshelp] Weather stations]

From: "William Beals" <will@beals5.com>
Date: Fri, 24 Nov 2000 19:19:00 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: <Billecb@aol.com>
Message-ID: <LYR15067-121343-2000.11.24-20.32.17--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Bill and James:

Would like to help, but the whole reason I did the T238 thing was that I considered all those weather stations outside my budget. I've never played with any of them to know. Clearly Peet was popular enough to get its format included in the APRS format, so that is good. My advice, at T238 (howzat for unbiased?!!). At 9 months it may be a bit early for a soldering iron, but I'm sure he can be taught.

will

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

106. [wxsig] Zub-zero temperatures

From: "William Beals" <will@beals5.com>
Date: Fri, 24 Nov 2000 19:32:45 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121347-2000.11.24-20.45.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

Thanks for the info. The bit about it still being broke on 1.09 helps, I was concentrating on 1.10 changes.

will

(I'm futzing with email addresses on the reflector and it looks like my first attempt at this email bounced)

==
This message sent using 100% recycled Electronics.
(Minimum 30% post-comsumer content)
==
Will Beals (remote)
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

107. [wxsig] Update

From: "William Beals" <will@beals5.com>
Date: Mon, 27 Nov 2000 20:45:21 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-121810-2000.11.27-21.55.25--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Just to give you an update on what is going on. I spent a good deal of time this weekend trying to figure out where memory is getting trashed but didn't find anything overly telling. On the slightly good news front I did find two other more obscure bugs that no-one has reported yet. The first is a bug where I only checked half the bytes on the part of setup where I looked for two counters to tell the difference between a wind speed sensor and a rain counter. The second bug had to do with a counter not quite working the way it should for some ROM messages. The bug would only be if the message passed a 256-byte boundry which none did.

will

==
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==
Will Beals
15014 East Idaho Place

Aurora, CO 80012
303-755-0293
will@beals5.com
[Attachment: winmail.dat; application/ms-tnef; 1,912 bytes]

December 2000

Original source file: wxsig.0012
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/wxsig/mail_archive/wxsig.0012

1. [wxsig] APRSWXNET item

From: "Russ Chadwick" <crb5@qwest.net>
Date: Sat, 2 Dec 2000 19:31:56 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-122529-2000.12.02-20.43.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I sent an information item to the people who are participating in APRSWXNET.
If you are a member of APRSWXNET and you don't receive it, let me know.

Russ
kb0tvj

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

2. [wxsig] RE: APRSWXNET item

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sat, 2 Dec 2000 22:58:48 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-122542-2000.12.02-22.10.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I didn't get anything. I think I am there -- APRS010 ?????

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Russ Chadwick
> Sent: Saturday, December 02, 2000 21:32 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] APRSWXNET item
>
>
> I sent an information item to the people who are
> participating in APRSWXNET.
> If you are a member of APRSWXNET and you don't receive it,
> let me know.
>
> Russ
> kb0tvj
>
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

3. [wxsig] Re: APRSWXNET item

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Sat, 2 Dec 2000 22:27:50 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-122544-2000.12.02-22.39.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dont think I received anything either. AP006?

-----Original Message-----
From: Russ Chadwick <crb5@qwest.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Saturday, December 02, 2000 8:35 PM
Subject: [wxsig] APRSWXNET item

>I sent an information item to the people who are participating in
APRSWXNET.
>If you are a member of APRSWXNET and you don't receive it, let me know.
>
>Russ
>kb0tvj
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

4. [wxsig] Re: Transferring Dallas IDs to T238

From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 3 Dec 2000 00:59:16 -0400
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-122573-2000.12.03-00.11.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm trying to get the ID's back in the T238 and running into
programming difficulties. How do you get past the Motorola
security screen in the (PROG08SZ) programmer?

<background info>
I had a series of brownouts the other day which seemingly killed
the ID's and totals in the T238 -- it powers up ok, but get lots of
errors. I've determined that there are no problems with the unit (I
can get ID numbers and readings from other software).

Sooo I decided to start playing with the Motorola software to re-
flash the uP and pre-install the ID's by hand rather than bring the
unit down. I have made all of the necessary changes, started the
IDE, and compiled everything ok. Now I seem to be having
problems with step 6 below.
</background info>

On 30 Aug 2000, at 22:18, William Beals wrote:

> After making the above changes, right now the ony way to get them into
> your micro is to use the motorola develoment tools. The tools really
> arn't that bad (compared to chiseling out bits on the die anyway!!)
>
> 1) Take the latest source code from the website.
> 2) Decompress all the files.
> 3) Open up wx08.asm.
> 4) Starting around line 188, make all SETs SETNOTs except USERS.
> 5) Run the assembler (should pass!)
> 6) Start the programmer, erase the whole flash and reprogram it with your
> compiled code. 7) Hopefully you will be up and running with the new IDs.
>
> Hopefully the above process will work for you. If you have trouble or
> think several steps need elaborating, please let me (and the reflector)
> know and I can put it in a FAQ for the website. I'd especially need help
> with getting the data out of the Dallas software.
>

Random Quote:

    Dictatorship (n): a form of government under which everything
    which is not prohibited is compulsory.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

5. [wxsig] Re: Transferring Dallas IDs to T238

From: "William Beals" <will@beals5.com>
Date: Sun, 3 Dec 2000 08:23:04 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-122625-2000.12.03-09.34.15--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aarron:

That security thing is a pain. The secret is to go ahead and let it fail.
When you try and establish contact with the micro using the programmer it
needs to know some secret IDs in order to be able to read memory. When it
tries its eight codes and none work you have the option of still going while
still failing the security check. When you do this, all memory locations
report the same value. In this mode you can still use the erase all flash
command to clear out everything--including the secret ID. After doing this
exit and restart the programmer. This time the option of either all 00's or
all FF's (I'm pretty sure it is all FF's is the secret ID for an erased part
and you should then be allowed to program the device. Lemme know if you are
still having problems.

will

-----Original Message-----
From: bounce-wxsig-15707@lists.tapr.org
[mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Aaron Morrison
Sent: Saturday, December 02, 2000 9:59 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Transferring Dallas IDs to T238

I'm trying to get the ID's back in the T238 and running into
programming difficulties. How do you get past the Motorola
security screen in the (PROG08SZ) programmer?

<background info>
I had a series of brownouts the other day which seemingly killed
the ID's and totals in the T238 -- it powers up ok, but get lots of
errors. I've determined that there are no problems with the unit (I
can get ID numbers and readings from other software).

Sooo I decided to start playing with the Motorola software to re-
flash the uP and pre-install the ID's by hand rather than bring the
unit down. I have made all of the necessary changes, started the
IDE, and compiled everything ok. Now I seem to be having
problems with step 6 below.
</background info>

On 30 Aug 2000, at 22:18, William Beals wrote:

> After making the above changes, right now the ony way to get them into
> your micro is to use the motorola develoment tools. The tools really
> arn't that bad (compared to chiseling out bits on the die anyway!!)
>
> 1) Take the latest source code from the website.
> 2) Decompress all the files.
> 3) Open up wx08.asm.
> 4) Starting around line 188, make all SETs SETNOTs except USERS.
> 5) Run the assembler (should pass!)
> 6) Start the programmer, erase the whole flash and reprogram it with your
> compiled code. 7) Hopefully you will be up and running with the new IDs.
>
> Hopefully the above process will work for you. If you have trouble or
> think several steps need elaborating, please let me (and the reflector)
> know and I can put it in a FAQ for the website. I'd especially need help
> with getting the data out of the Dallas software.
>

Random Quote:

    Dictatorship (n): a form of government under which everything
    which is not prohibited is compulsory.

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

6. [wxsig] RE: wxsig digest: December 03, 2000

From: "Hampton, Rickey" <Rickey_Hampton@PremierInc.com>
Date: Mon, 4 Dec 2000 10:41:30 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-122780-2000.12.04-09.53.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aaron,

I did something quite similar a few months ago. (I had the sensors mounted on the roof before I constructed the T238 board. I manually configured the software and flashed the EEPROM to avoid having to climb on top of the house again.) I don't remember the details, but I put some LONG posts on the listserve with the details of what, why and how I did what I did.

As I recall, there is an option in the Motorola software to use the codes in the Will's software itself, and that works fine.

If you haven't solved your problem yet, take a look at these two posts in the archives. They should tell you most of what you need to know. If not, ask....

http://www.tapr.org/tapr/list-archive/wxsig/0008/msg00214.html
http://www.tapr.org/tapr/list-archive/wxsig/0009/msg00019.html

Rick Hampton
Manager, Operations Support
800.825.1786 Ext. 5476

Subject: Re: Transferring Dallas IDs to T238
From: "Aaron Morrison" <ae4ko@amsat.org>
Date: Sun, 3 Dec 2000 00:59:16 -0400
X-Message-Number: 1

I'm trying to get the ID's back in the T238 and running into programming difficulties. How do you get past the Motorola security screen in the (PROG08SZ) programmer?

<background info>
I had a series of brownouts the other day which seemingly killed the ID's and totals in the T238 -- it powers up ok, but get lots of errors. I've determined that there are no problems with the unit (I can get ID numbers and readings from other software).

Sooo I decided to start playing with the Motorola software to re-flash the uP and pre-install the ID's by hand rather than bring the unit down. I have made all of the necessary changes, started the IDE, and compiled everything ok. Now I seem to be having problems with step 6 below.
</background info>

On 30 Aug 2000, at 22:18, William Beals wrote:

> After making the above changes, right now the ony way to get them into
> your micro is to use the motorola develoment tools. The tools really
> arn't that bad (compared to chiseling out bits on the die anyway!!)
>
> 1) Take the latest source code from the website.
> 2) Decompress all the files.
> 3) Open up wx08.asm.
> 4) Starting around line 188, make all SETs SETNOTs except USERS.
> 5) Run the assembler (should pass!)
> 6) Start the programmer, erase the whole flash and reprogram it with your
> compiled code. 7) Hopefully you will be up and running with the new IDs.
>
> Hopefully the above process will work for you. If you have trouble or

> think several steps need elaborating, please let me (and the reflector)
> know and I can put it in a FAQ for the website. I'd especially need help
> with getting the data out of the Dallas software.
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

7. [wxsig] Re: Mexican 1-Wire unit

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Tue, 5 Dec 2000 20:47:17 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123082-2000.12.05-19.58.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Would someone please send me the URL for the Mexican 1-wire unit.

Thanks

Mark, KC2ENI

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

8. [wxsig] Re: Mexican 1-Wire unit

From: "Russ Chadwick" <crb5@qwest.net>
Date: Tue, 5 Dec 2000 19:00:37 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123084-2000.12.05-20.13.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Mark Phillips <g7ltt@g7ltt.com>
Subject: [wxsig] Re: Mexican 1-Wire unit

> Would someone please send me the URL for the Mexican 1-wire unit.
>
> Thanks
>
> Mark, KC2ENI

Mark,

This is an e-mail that I received from Aitor Arrieta about the unit they
have for sale.

Hi Russ, this email is just to inform you that the Weather Station s
available now at www.aag.com.mx
Best Wishes
Aitor Arrieta G. (XE1YAW)
Automatizacion Aplicada a Gasolineras S.A. de C.V.
Lat.20°35'11''N, Lng.100°24'12''W

I understand that it is very similar to the unit from Dallas Semiconductor.
Further, I understand that all of the directions on the DallasSemi 1-Wire
weather station web page apply to this unit as well.

Russ

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

9. [wxsig] Re: Mexican 1-Wire unit

From: "William Beals" <will@beals5.com>
Date: Tue, 5 Dec 2000 19:04:20 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123085-2000.12.05-20.14.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

www.aag.com.mx

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Mark Phillips
Sent: Tuesday, December 05, 2000 6:47 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: Mexican 1-Wire unit

Would someone please send me the URL for the Mexican 1-wire unit.

Thanks

Mark, KC2ENI

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

10. [wxsig] Re: Mexican 1-Wire unit

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Tue, 5 Dec 2000 20:19:39 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123087-2000.12.05-20.31.12--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I dropped Steve a note asking that the TAPR web site be updated with the
Mexican
1-Wire unit information (order the kit and get info at same spot !)

G. Beat
w9gb
----- Original Message -----
From: "William Beals" <will@beals5.com>
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Sent: Tuesday, December 05, 2000 8:04 PM
Subject: [wxsig] Re: Mexican 1-Wire unit

> www.aag.com.mx
>
> will
>
> -----Original Message-----
> From: bounce-wxsig-21132@lists.tapr.org
> [mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Mark Phillips
> Sent: Tuesday, December 05, 2000 6:47 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: Mexican 1-Wire unit
>
>
>
> Would someone please send me the URL for the Mexican 1-wire unit.
>
> Thanks
>
> Mark, KC2ENI
>
>
> ---
> You are currently subscribed to wxsig as: will@beals5.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
> ---
> You are currently subscribed to wxsig as: gregory.beat@mediaone.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

11. [wxsig] more than one ...

From: "Mark Phillips" <g7ltt@g7ltt.com>
Date: Wed, 6 Dec 2000 18:56:46 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123233-2000.12.06-18.07.35--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is it possible to have more than one 1-wire controller on the bus? I'm
thinking that I can tee-off the cable that goes to my T238 and plug it into
the adapter that came with the weather system. That way I could have both
the packet data and the PC data supplied by the same system.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

12. [wxsig] RE: more than one ...

From: "William Beals" <will@beals5.com>
Date: Wed, 6 Dec 2000 18:27:33 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123252-2000.12.06-19.37.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark:

This idea has come up before and I am pretty sure the results will not be
good. The bus is not a pure open-collector-style bus. For instance, when I
am doing a temperature conversion I need to actively drive the line high.
If another master would try to initiate communications during that time, you
would be violating a few chips specs. Also, there is nothing in the
protocol to detect or handle message collisions. I suspect it might work
"sometimes", but not reliably.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Mark Phillips
Sent: Wednesday, December 06, 2000 4:57 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] more than one ...

Is it possible to have more than one 1-wire controller on the bus? I'm
thinking that I can tee-off the cable that goes to my T238 and plug it into
the adapter that came with the weather system. That way I could have both
the packet data and the PC data supplied by the same system.

Mark Phillips, G7LTT/KC2ENI
New York, NY - 11103
40' 45.781N 073' 54.472W
http://www.g7ltt.com

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

13. [wxsig] Re: more than one ...

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Thu, 07 Dec 2000 07:18:03 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123304-2000.12.07-07.30.30--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I thought about this also some time back. I wanted a second unit in the
house as my t238 is out in the radio shack. After looking at the code I
decided it would not work because the one wire devices are NOT read
only. There are some two way data transfers. I could be wrong but it
sure looks like it would not work.
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

14. [wxsig] Weather Station Available Now

From: "Aitor Arrieta G." <aag@aag.com.mx>
Date: Thu, 7 Dec 2000 20:55:53
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123438-2000.12.07-21.07.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I want to inform all of you that the Weather Station is available again at
original price. For more information visit www.aag.com.mx
Aitor (XE1YAW)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

15. [wxsig] FINDU Display Scales - I am ruining it!!!

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 8 Dec 2000 07:48:04 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123506-2000.12.08-06.59.31--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Looks like I am spoiling the findu wx display scales ... first the hi
winds I had here a week or two ago where my wind data was near the top
of the scale and the gust data was up in the wind direction graph and
now with a -14F last night off the bottom of the temperature graph. It
would seem that maybe the temperature graph at least could be changes
slightly for the respective seasons ... I was wondering if the temp
scale could be in 10's instead of 20's and the wind scale in 5's instead
of 10's.

72 de brian, n1bq

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418   NJQRP #274
QRP-L #2276   Zombie #768

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

16. [wxsig] RE: FINDU Display Scales - I am ruining it!!!

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 8 Dec 2000 16:34:07 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-123617-2000.12.08-15.45.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I also notice that today when the temperature got back up to zero F and
stayed there for awhile that the findu display did not graph it until it
went above zero and then it only showed an unbroken line in the "last
five days" dsiplay, In "last two or one day" display it showed a gap, as
if it treated 0F as "no data point"

> -----Original Message-----

> From: Brian B. Riley
> Sent: Friday, December 08, 2000 7:48 AM
>
> Looks like I am spoiling the findu wx display scales ... first the hi
> winds I had here a week or two ago where my wind data was near the top
> of the scale and the gust data was up in the wind direction graph and
> now with a -14F last night off the bottom of the temperature graph. It
> would seem that maybe the temperature graph at least could be changes
> slightly for the respective seasons ... I was wondering if the temp
> scale could be in 10's instead of 20's and the wind scale in
> 5's instead
> of 10's.
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

17. [wxsig] Bad weather data

From: "William Beals" <will@beals5.com>
Date: Mon, 11 Dec 2000 09:44:23 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124074-2000.12.11-10.55.26--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Russ has been looking at ALL of the weather data from T238s that are getting into the APRS network and analyzing it. There are 14 stations up with 3500 packets making it through the network, not bad! He is doing this to see what we can do to isolate the occasional -68 degree problem that is cropping up now that the weather is getting cold.

One other thing that is showing up in the logs is wind directions greater than 360 degrees. This was a known bug that has been fixed by the latest release (1.10.2) on the website (http://www.beals5.com/wx). If this is of concern to you, you may want to consider upgrading your firmware.

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

18. [wxsig] Re: APRSWXNET item

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 11 Dec 2000 11:09:29 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124077-2000.12.11-11.24.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Russ, I still can't seem to find my station. I thought I was AP006, but this is showing up in capital letters in northwest Missouri. Can you verify my station name and location?

Thanks,

Rich Beckwith - Wn0x
Jefferson City, Missouri

38.62950/-92.34417

-----Original Message-----
From: Russ Chadwick <crb5@qwest.net>

To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Saturday, December 02, 2000 8:35 PM
Subject: [wxsig] APRSWXNET item

>I sent an information item to the people who are participating in
APRSWXNET.
>If you are a member of APRSWXNET and you don't receive it, let me know.
>
>Russ
>kb0tvj
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

19. [wxsig] Re: APRSWXNET item

From: "Russ Chadwick" <crb5@qwest.net>
Date: Mon, 11 Dec 2000 16:50:24 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124106-2000.12.11-18.02.46--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich,

I have you in the NW part of Cole County on both the NOAA mesonet web
display and on WinAPRS with the PrecisionMapping CD. Both appear to have
you in the same place at about 1650 MST. You are identified on both with
your callsign. Callsigns will be used on the mesonet display rather than AP
designations.

Russ
kb0tvj

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Monday, December 11, 2000 10:09 AM
Subject: [wxsig] Re: APRSWXNET item

> Russ, I still can't seem to find my station. I thought I was AP006, but
> this is showing up in capital letters in northwest Missouri. Can you
verify
> my station name and location?
>
> Thanks,
>
> Rich Beckwith - Wn0x
> Jefferson City, Missouri
>
> 38.62950/-92.34417
>
>
>
>
> -----Original Message-----
> From: Russ Chadwick <crb5@qwest.net>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Date: Saturday, December 02, 2000 8:35 PM
> Subject: [wxsig] APRSWXNET item
>
>
> >I sent an information item to the people who are participating in
> APRSWXNET.
> >If you are a member of APRSWXNET and you don't receive it, let me know.
> >
> >Russ
> >kb0tvj
> >
> >

> >---
> >You are currently subscribed to wxsig as: wn0x@earthlink.net
> >To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

20. [wxsig] Re: APRSWXNET item

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Mon, 11 Dec 2000 21:04:25 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124137-2000.12.11-21.19.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I may be using the wrong web site. I have been going to
http://www-sdd.fsl.noaa.gov/MSAS/region_plots_9.html and selecting the
appropriate time.

-----Original Message-----
From: Russ Chadwick <crb5@qwest.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Monday, December 11, 2000 5:55 PM
Subject: [wxsig] Re: APRSWXNET item

>Rich,
>
>I have you in the NW part of Cole County on both the NOAA mesonet web
>display and on WinAPRS with the PrecisionMapping CD. Both appear to have
>you in the same place at about 1650 MST. You are identified on both with
>your callsign. Callsigns will be used on the mesonet display rather than
AP
>designations.
>
>Russ
>kb0tvj
>
>----- Original Message -----
>From: Rich Beckwith <wn0x@earthlink.net>
>To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
>Sent: Monday, December 11, 2000 10:09 AM
>Subject: [wxsig] Re: APRSWXNET item
>
>
>> Russ, I still can't seem to find my station. I thought I was AP006, but
>> this is showing up in capital letters in northwest Missouri. Can you
>verify
>> my station name and location?
>>
>> Thanks,
>>
>> Rich Beckwith - Wn0x
>> Jefferson City, Missouri
>>
>> 38.62950/-92.34417
>>
>>
>>
>>
>> -----Original Message-----
>> From: Russ Chadwick <crb5@qwest.net>
>> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
>> Date: Saturday, December 02, 2000 8:35 PM
>> Subject: [wxsig] APRSWXNET item
>>
>>
>> >I sent an information item to the people who are participating in

>> APRSWXNET.
>> >If you are a member of APRSWXNET and you don't receive it, let me know.
>> >
>> >Russ
>> >kb0tvj
>> >
>> >
>> >---
>> >You are currently subscribed to wxsig as: wn0x@earthlink.net
>> >To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>> >
>> >
>>
>>
>> ---
>> You are currently subscribed to wxsig as: crb5@uswest.net
>> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>>
>>
>
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

21. [wxsig] Re: APRSWXNET item

From: "Russ Chadwick" <crb5@qwest.net>
Date: Mon, 11 Dec 2000 21:03:22 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124142-2000.12.11-22.15.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rich,

The AP symbol you are seeing on that map is another APRSWXNET station and
the map clutter is making the name hard to read. A better map is the meso
net map at:

http://www-frd.fsl.noaa.gov/mesonet/beta/

I just checked and you are there in the right place.

Russ
kb0tvj

----- Original Message -----
From: Rich Beckwith <wn0x@earthlink.net>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Monday, December 11, 2000 8:04 PM
Subject: [wxsig] Re: APRSWXNET item

> I may be using the wrong web site. I have been going to
> http://www-sdd.fsl.noaa.gov/MSAS/region_plots_9.html and selecting the
> appropriate time.
>
>
> -----Original Message-----
> From: Russ Chadwick <crb5@qwest.net>
> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> Date: Monday, December 11, 2000 5:55 PM
> Subject: [wxsig] Re: APRSWXNET item
>
>
> >Rich,
> >
> >I have you in the NW part of Cole County on both the NOAA mesonet web
> >display and on WinAPRS with the PrecisionMapping CD. Both appear to have
> >you in the same place at about 1650 MST. You are identified on both with
> >your callsign. Callsigns will be used on the mesonet display rather than
> AP
> >designations.

> >
> >Russ
> >kb0tvj
> >
> >----- Original Message -----
> >From: Rich Beckwith <wn0x@earthlink.net>
> >To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> >Sent: Monday, December 11, 2000 10:09 AM
> >Subject: [wxsig] Re: APRSWXNET item
> >
> >
> >> Russ, I still can't seem to find my station. I thought I was AP006,
but
> >> this is showing up in capital letters in northwest Missouri. Can you
> >verify
> >> my station name and location?
> >>
> >> Thanks,
> >>
> >> Rich Beckwith - Wn0x
> >> Jefferson City, Missouri
> >>
> >> 38.62950/-92.34417
> >>
> >>
> >>
> >>
> >> -----Original Message-----
> >> From: Russ Chadwick <crb5@qwest.net>
> >> To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
> >> Date: Saturday, December 02, 2000 8:35 PM
> >> Subject: [wxsig] APRSWXNET item
> >>
> >>
> >> >I sent an information item to the people who are participating in
> >> APRSWXNET.
> >> >If you are a member of APRSWXNET and you don't receive it, let me
know.
> >> >
> >> >Russ
> >> >kb0tvj
> >> >
> >> >
> >> >---
> >> >You are currently subscribed to wxsig as: wn0x@earthlink.net
> >> >To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >> >
> >> >
> >>
> >>
> >> ---
> >> You are currently subscribed to wxsig as: crb5@uswest.net
> >> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >>
> >>
> >
> >
> >---
> >You are currently subscribed to wxsig as: wn0x@earthlink.net
> >To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

22. [wxsig] Re: APRSWXNET item

From: "Darrell Sutton" <kf4hjw@home.com>
Date: Tue, 12 Dec 2000 19:05:29 -0500

To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124281-2000.12.12-18.16.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I like the new beta map http://www-frd.fsl.noaa.gov/mesonet/beta/
and it looks neat. Now can you help me understand what it means when I look
on any of the sites listed.

thanks
darrell

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

23. [wxsig] Re: APRSWXNET item

From: "Russ Chadwick" <crb5@qwest.net>
Date: Tue, 12 Dec 2000 19:29:01 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124307-2000.12.12-21.40.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Darrell,

When the cursor is on a station, the mesonet name is above the station and
down the right side is time, pressure, altitude and wind dir/speed. Down
the left side is call&location, temperature, a space, and dew point. I
believe that the space is where visibility is placed. Note that when you
click on the boxes at the bottom, only temperatures in the range you've
selected are displayed. Really interesting during the current cold air
that's going across the country.

The web page is under developement and will be made public in a month or so.
Some of the mesonets may not be present on the public site, but APRSWXNET
will be. It's great for comparing your readings with the nearby sites.

Russ
kb0tvj

----- Original Message -----
From: Darrell Sutton <kf4hjw@home.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Tuesday, December 12, 2000 5:05 PM
Subject: [wxsig] Re: APRSWXNET item

> I like the new beta map http://www-frd.fsl.noaa.gov/mesonet/beta/
> and it looks neat. Now can you help me understand what it means when I
look
> on any of the sites listed.
>
> thanks
> darrell
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

24. [wxsig] RE: 1.10.2 testing

From: "William Beals" <will@beals5.com>
Date: Sat, 16 Dec 2000 12:20:51 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "Russ Chadwick \(home\)" <crb5@uswest.net>
Message-ID: <LYR15067-124934-2000.12.16-13.32.29--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

I have been pretty slow in responding to this bug, but it is now fixed. I
found the problem, it had to do with a comparison to the lowest possible

baud rate that was not working. It will be included in the next (1.11.x)
release.

Right now I am still fighting a bug where I report -68s on rare occasions.
This is a nasty bug that I haven't chased down yet.

will

-----Original Message-----
From: bounce-wxsig-15707@lists.tapr.org
[mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Bill Ellis
Sent: Tuesday, November 21, 2000 6:05 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: 1.10.2 testing

Will, I was testing the TNC LTP mode. I was doing this testing as you
said you did not have the time to. I thought some of us could "share"
the testing. I'm still in process of testing these features and will let
you know if I see any other anomalies.
Bill

You are currently subscribed to wxsig as: wmbeals@compuserve.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

25. [wxsig] RE: 1.10.2 testing

From: William Delbert Ellis <n5ztw@texas.net>
Date: Sat, 16 Dec 2000 14:00:30 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124938-2000.12.16-14.22.20--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks Will,
I have seen another possible bug. After a power failure the wind direction
goes blank and it cannot be calibrated. Calibration does not "see" the wind
dirrection ID's It looks like the ID's go away and cannot be read again. I
have had to put the chip with the previous version back in. This chip works
great so the wx station is ok. Part of my testing is to burn a new chip for
each version so I all I have to do is change chips to go back a version.
(should have used a ZIF socket)
Bill N5ZTW

William Beals wrote:

> Bill:
>
> I have been pretty slow in responding to this bug, but it is now fixed. I
> found the problem, it had to do with a comparison to the lowest possible
> baud rate that was not working. It will be included in the next (1.11.x)
> release.
>
> Right now I am still fighting a bug where I report -68s on rare occasions.
> This is a nasty bug that I haven't chased down yet.
>
> will
>
> -----Original Message-----
> From: bounce-wxsig-15707@lists.tapr.org
> [mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Bill Ellis
> Sent: Tuesday, November 21, 2000 6:05 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: 1.10.2 testing
>
> Will, I was testing the TNC LTP mode. I was doing this testing as you
> said you did not have the time to. I thought some of us could "share"
> the testing. I'm still in process of testing these features and will let
> you know if I see any other anomalies.
> Bill
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

>
> ---
> You are currently subscribed to wxsig as: n5ztw@texas.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

26. [wxsig] RE: 1.10.2 testing

From: "William Beals" <will@beals5.com>
Date: Sat, 16 Dec 2000 18:31:16 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124962-2000.12.16-19.42.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

This is a new one to me. I'll tinker around and see if I can reproduce it.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of William Delbert
Ellis
Sent: Saturday, December 16, 2000 1:01 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: 1.10.2 testing

Thanks Will,
I have seen another possible bug. After a power failure the wind direction
goes blank and it cannot be calibrated. Calibration does not "see" the wind
dirrection ID's It looks like the ID's go away and cannot be read again. I
have had to put the chip with the previous version back in. This chip works
great so the wx station is ok. Part of my testing is to burn a new chip for
each version so I all I have to do is change chips to go back a version.
(should have used a ZIF socket)
Bill N5ZTW

William Beals wrote:

> Bill:
>
> I have been pretty slow in responding to this bug, but it is now fixed. I
> found the problem, it had to do with a comparison to the lowest possible
> baud rate that was not working. It will be included in the next (1.11.x)
> release.
>
> Right now I am still fighting a bug where I report -68s on rare occasions.
> This is a nasty bug that I haven't chased down yet.
>
> will
>
> -----Original Message-----
> From: bounce-wxsig-15707@lists.tapr.org
> [mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Bill Ellis
> Sent: Tuesday, November 21, 2000 6:05 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: 1.10.2 testing
>
> Will, I was testing the TNC LTP mode. I was doing this testing as you
> said you did not have the time to. I thought some of us could "share"
> the testing. I'm still in process of testing these features and will let
> you know if I see any other anomalies.
> Bill
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> ---
> You are currently subscribed to wxsig as: n5ztw@texas.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

27. [wxsig] RE: 1.10.2 testing

From: "William Beals" <will@beals5.com>
Date: Sat, 16 Dec 2000 20:33:57 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-124972-2000.12.16-21.44.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

Can you tell me the sequence you go through to get this problem, my initial
stabs at reproducing it are not working. If you could tell me what is on
the display when it cannot see the IDs, that will tell me which routine to
start looking in. Thanks. It is nice having people help with finding bugs
and such.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of William Delbert
Ellis
Sent: Saturday, December 16, 2000 1:01 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: 1.10.2 testing

Thanks Will,
I have seen another possible bug. After a power failure the wind direction
goes blank and it cannot be calibrated. Calibration does not "see" the wind
dirrection ID's It looks like the ID's go away and cannot be read again. I
have had to put the chip with the previous version back in. This chip works
great so the wx station is ok. Part of my testing is to burn a new chip for
each version so I all I have to do is change chips to go back a version.
(should have used a ZIF socket)
Bill N5ZTW

William Beals wrote:

> Bill:
>
> I have been pretty slow in responding to this bug, but it is now fixed. I
> found the problem, it had to do with a comparison to the lowest possible
> baud rate that was not working. It will be included in the next (1.11.x)
> release.
>
> Right now I am still fighting a bug where I report -68s on rare occasions.
> This is a nasty bug that I haven't chased down yet.
>
> will
>
> -----Original Message-----
> From: bounce-wxsig-15707@lists.tapr.org
> [mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Bill Ellis
> Sent: Tuesday, November 21, 2000 6:05 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: 1.10.2 testing
>
> Will, I was testing the TNC LTP mode. I was doing this testing as you
> said you did not have the time to. I thought some of us could "share"
> the testing. I'm still in process of testing these features and will let
> you know if I see any other anomalies.
> Bill
>
> ---
> You are currently subscribed to wxsig as: wmbeals@compuserve.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
> ---
> You are currently subscribed to wxsig as: n5ztw@texas.net

> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

28. [wxsig] RE: Bad weather data

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sun, 17 Dec 2000 23:15:39 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125138-2000.12.17-22.27.41--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am now getting the -68F porblme and the 99mph problme. First, about
1800z today I saw the -68F on my D700 display as I was driving around
doing Christmas shopping. a while later the temp cleared up and then the
wind went to 99mph several times (actually not that far fetched when you
consider that yesterday and early today I had the severest winds since I
put the station up) and finally about five minutes ago I noticed via
Findu that the station had not broadcast a weather datum in over 5 hours
... I reset the power and reset the time. I am still running 1.09 ... I
just downlaoded 1-10-2 and will load it tomorrow afternoon and hook my
1994 as well ... sigh ... so many toys, so little time!!!

 72 de brian, n1bq

> -----Original Message-----
> From: William Beals
> Sent: Monday, December 11, 2000 11:44 AM
>
> Russ has been looking at ALL of the weather data from T238s
> that are getting into the APRS network and analyzing it.
> There are 14 stations up with 3500 packets making it through
> the network, not bad! He is doing this to see what we can do
> to isolate the occasional -68 degree problem that is cropping
> up now that the weather is getting cold.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

29. [wxsig] RE: 1.10.2 testing

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Mon, 18 Dec 2000 13:37:00 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125264-2000.12.18-13.50.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,
I first noticed the problem about a week ago. I had a power failure and
I had to reset the clock. The next day I noticed the wind direction on
findu was stuck at 0 north all day. All outher functions looked normal.
When I got home I went to the shack and inspection of the display found
wind direction was always "--"
I next tried to recalibrate the wind direction. Under the "rotate
clockwise slowly" the ID's never show up. I replaced the chip with the
old one (v9) and it was reading direction OK with no calibration. Today
I programmed two more chips with 1.10.2 and I will try it out again when
I get home. You can view my testing on findu under N5ZTW or zip code
78620. As you will see I'm now using v 1.9.x with Peet format. When I go
to 1.10.2 I will change to TNC LTP and gust information will be shown.
I am using a KPC-3 and need the CR LF hence the format change.
Thanks for all your hard work
Regards,
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

30. [wxsig] RE: Bad weather data

From: "William Beals" <will@beals5.com>
Date: Mon, 18 Dec 2000 20:57:30 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125350-2000.12.18-22.08.14--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

(Also a note for "All" further down)

Russ has been on the lookout for this -68 problem on all of the stations
covered by the APRS network and had mentioned your problems yesterday. I
have not been able to isolate the problem yet. Current theory is that it
may be something hardware-related that is confusing the heck out of the
software as it seems very site-specific. No matter what the root cause, the
software should not be putting out bad data. Russ and I are trying like mad
to find out how to repeat the problem so we can try to isolate it. He has
one station that exhibits the problem quite regularly that he'll be sending
me so I can see if I can reproduce under my debugger.

All: I am working on a 1.11.x release that is going to give the ability to
add some debug information on to the end of the APRS wx packet right after
the "e1w" identifier. This is nice legal syntax (I've paid my sin taxes)
and will allow me to see some internal variables from your sites when I get
nasty problems like the -68 problem. This debug information will ONLY be
added on the first packet out (telling me SW version number) and when I
detect weird readings. It should not increase overall bandwidth usage.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Brian B. Riley
Sent: Sunday, December 17, 2000 9:16 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Bad weather data

I am now getting the -68F porblme and the 99mph problme. First, about
1800z today I saw the -68F on my D700 display as I was driving around
doing Christmas shopping. a while later the temp cleared up and then the
wind went to 99mph several times (actually not that far fetched when you
consider that yesterday and early today I had the severest winds since I
put the station up) and finally about five minutes ago I noticed via
Findu that the station had not broadcast a weather datum in over 5 hours
... I reset the power and reset the time. I am still running 1.09 ... I
just downlaoded 1-10-2 and will load it tomorrow afternoon and hook my
1994 as well ... sigh ... so many toys, so little time!!!

 72 de brian, n1bq

> -----Original Message-----
> From: William Beals
> Sent: Monday, December 11, 2000 11:44 AM
>
> Russ has been looking at ALL of the weather data from T238s
> that are getting into the APRS network and analyzing it.
> There are 14 stations up with 3500 packets making it through
> the network, not bad! He is doing this to see what we can do
> to isolate the occasional -68 degree problem that is cropping
> up now that the weather is getting cold.

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

31. [wxsig] RE: Bad weather data

From: Steve Dimse <sdimse@earthlink.net>
Date: Mon, 18 Dec 2000 23:09:55 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125353-2000.12.18-22.24.06--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

On 12/18/00 10:57 PM William Beals (will@beals5.com) wrote:

>All: I am working on a 1.11.x release that is going to give the ability to
>add some debug information on to the end of the APRS wx packet right after
>the "e1w" identifier. This is nice legal syntax (I've paid my sin taxes)
>and will allow me to see some internal variables from your sites when I get
>nasty problems like the -68 problem. This debug information will ONLY be
>added on the first packet out (telling me SW version number) and when I
>detect weird readings. It should not increase overall bandwidth usage.
>
Add as much bandwidth as you need. The impact on the RF LANs will be
minimal, and the need to pin this down is more than sufficient
justification.

Steve K4HG

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

32. [wxsig] RE: 1.10.2 testing

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Tue, 19 Dec 2000 07:38:16 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125395-2000.12.19-07.52.49--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will and the group,
OK, I installed a new chip with 1.10.2 I still could not calibrate the
wind direction. The ID's just won't show up. If I put the ver 1.09 chip
back in, the direction is displayed so the Dallas electronics seem to be
OK. I remember now after climbing to the roof of the shack last night
that this also happened the very first time I installed 1.10.2 but after
about four or five attempts to calibrate the ID's showed up and the
system calibrated. (power down reset between each attempt) It worked
about two to three weeks until the power failure and the ID's were lost.
I have not been able to calibrate since then. I checked the error screen
and found 0 errors except for wind direction. It shows an incremental
error count of about one every five seconds. I guess this would be as
expected if the unit would not calibrate. I think today I may burn
another 1.09 chip and see if it will calibrate from a fresh start.
System is currently up and running on 1.09 and can be seen at findu.com
Can anyone else think of something else I should try or look at? Did
anyone else see this when upgrading to 1.10.2?
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

33. [wxsig] RE: Bad weather data

From: "Rich Beckwith" <wn0x@earthlink.net>
Date: Tue, 19 Dec 2000 08:26:11 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125492-2000.12.19-21.00.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ditto. This is well worth the bandwidth to get this issue resolved, and
much more appropriate than some of the traffic I see on the APRS network.
You can add your data to every packet as far as I am concerned.

>>
>Add as much bandwidth as you need. The impact on the RF LANs will be
>minimal, and the need to pin this down is more than sufficient
>justification.
>
>Steve K4HG
>
>---
>You are currently subscribed to wxsig as: wn0x@earthlink.net
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

34. [wxsig] RE: 1.10.2 testing

From: "William Beals" <will@beals5.com>
Date: Tue, 19 Dec 2000 21:21:05 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125502-2000.12.19-22.30.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bill:

I looked back at my code change notes, and the only thing I've done in the wind calibration area between 1.9.x and 1.10.x was to fix a bad jump that forced you to re-enter the temperature ID if the wind cal failed. If I understand your description below, you are not quite comparing the same thing on the two versions, you are checking pre-cal'd 1.09 software versus trying to cal using 1.10.2 software. A good test would be to run a cal on 1.09 software to see if that works. If it does, we have something clearly software related whereas if it doesn't, then it may be hardware.

Can you also give me a quick rundown of your 1-wire network setup? Wire lengths, wire type, where branches (if any) are in the network. Sensors (two temp sensors, 1994?, etc)

Also, want to confirm the stuck display, you are in the 1/3 screen showing eight dashes and no digits at all. That lets me know exactly in the code where you are hung up.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Bill Ellis
Sent: Tuesday, December 19, 2000 6:38 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: 1.10.2 testing

Will and the group,
OK, I installed a new chip with 1.10.2 I still could not calibrate the wind direction. The ID's just won't show up. If I put the ver 1.09 chip back in, the direction is displayed so the Dallas electronics seem to be OK. I remember now after climbing to the roof of the shack last night that this also happened the very first time I installed 1.10.2 but after about four or five attempts to calibrate the ID's showed up and the system calibrated. (power down reset between each attempt) It worked about two to three weeks until the power failure and the ID's were lost. I have not been able to calibrate since then. I checked the error screen and found 0 errors except for wind direction. It shows an incremental error count of about one every five seconds. I guess this would be as expected if the unit would not calibrate. I think today I may burn another 1.09 chip and see if it will calibrate from a fresh start. System is currently up and running on 1.09 and can be seen at findu.com Can anyone else think of something else I should try or look at? Did anyone else see this when upgrading to 1.10.2?
Bill N5ZTW

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

35. [wxsig] RE: 1.10.2 testing

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Wed, 20 Dec 2000 08:57:43 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125547-2000.12.20-09.10.51--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,
1. PCB is home brew. Soldered NOT Wire Wrap! Mounted in a metal box.
2. 1 wire ports: Two on the PCB. One port is empty. The other has a 6" cable that feeds out the box tru a grommet and splits out to a double

port end. Only one of these is used. Total two empty ports.(I re-crimp
new ends on the cables to prevent the "cable crossover" issues.
3. No 1994 time I button
4. No second temp sensor
5. Rain gage installed
6. 15' of telephone extension cable from wx station. One loop wound
around magnetic clam shell core on T238 end 6" from double port cable.
7. Wx station mounted on the roof of the radio shack on conduit 5' off
metal roof, 15' from ground.
8. Powered by my main 13.8 V shack bus with mega amps of current. T238
has an LM309K 5v regulator mounted on the back of the metal box on a
small heat sink. Tantalum caps soldered to regulator at input and
output. (This is my modification to cover the backlight issues)
9. KPC3 TNC
10. T238 metal enclosure, TNC, and radio are all chassis earth grounded.
11. Yes I get stuck in the 1/3 screen with eight dashes. The screen
seems to be updating/refreshing every 1/2 second (flickering)so I don't
think the processor gets hung up. However pressing keys does nothing so
I have to power down reset.
12. I have enclosed a pic of the station install. As you can see its in
a "high" RF area! The only issues I see with this are occasional super
high wind speeds when I transmit on 10M. (this is to be expected) I will
take some more pics of my T238 for the group to see. I also have just
added a gelcell battery backup circuit. It uses a 12v relay and a semi
large uF capacitor. I am still testing it but it seems to work well. The
T238 current draw is so low that the cap keeps it running while the
relay switches over to the battery.
13. I will try a fresh 1.09.x tonite and let you know how it works. I
plan to add a second temp sensor and 1994 I button but I'm taking it
slow and testing lots of things first.
I am having a lot of fun working on this Wx station project. This is a
great project and a super group to work with. Thanks a bunch for your
hard work.
This is what its all about, Having fun!!!
Bill N5ZTW
[Attachment: Big D Wx.jpg; image/jpeg; 49,940 bytes]

36. [wxsig] RE: 1.10.2 testing

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Wed, 20 Dec 2000 12:35:37 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125568-2000.12.20-11.47.33--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: Bill Ellis
> Sent: Wednesday, December 20, 2000 9:58 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] RE: 1.10.2 testing
  [snip]

> a "high" RF area! The only issues I see with this are occasional super
> high wind speeds when I transmit on 10M. (this is to be
> expected) I will

 'expected' - I take issue on that ... I run a very active APRS digi
on 144.39 the antenna is only 12 feet above the sensors. The transmitter
is 3 feet from the T238 .... I run 10 meters here mostly 5watts but an
occasional excursion to 50 or 100 watts. I have never seen any readings
that correlated with adjacent transmissions here.

72 de brian, n1bq

--
N1BQ-3 @ 44 31.73N 072 51.55W
WideN-N digi and weather station in Underhill Center, VT
mailto:n1bq@wulfden.org
AMSAT LM-1418   NJQRP #274
QRP-L #2276   Zombie #768

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

37. [wxsig] RE: 1.10.2 testing

From: "Bill Ellis" <rwsw60@email.sps.mot.com>
Date: Wed, 20 Dec 2000 14:44:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125592-2000.12.20-14.57.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian,
I see this about 1 in 50 QSO's on 10m SSB 100w 40' above the WX station.
I think it must be certain frequencies that interfere with the counters.
I've seen the rain gage do it once.
My digi is also very active on 144.39 I run 50w with the transmitter
just under the T238 3/4".Antenna is 35' up. I never see problems with
this just HF SSB.
Bill N5ZTW

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

38. [wxsig] RE: Bad weather data

From: Doug <dbuhrman@radiks.net>
Date: Wed, 20 Dec 2000 18:06:19 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125628-2000.12.20-18.19.08--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I also agree to have some way to track other important items on the wx board. I was thinking it would be nice to send the error counter values once a day, maybe a few digital input points. It so easy to think of
these things when you don't have to code it!!!! A many thanks for all you hard efforts on this project Will.
Happy Holidays

Doug K0DSP

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

39. [wxsig] RF stuff

From: "William Beals" <will@beals5.com>
Date: Wed, 20 Dec 2000 21:36:36 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125661-2000.12.20-22.46.32--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Bill: That is one heckuva nice setup you have, Ham heaven! It looks like you have taken all the precautions I can think of for your environment. Your noticing a flicker on the display is good data. For that to happen the SW is likely thinking it picked up an ID, but then considering it invalid data or something and tossing it. You are right about no key response, at that stage of the game, aborting is not an option worth considering, so there is no sense in providing that option. One other suggestion is one I think you have done before and that is to measure the DC voltage with an voltmeter. I think I can do this in SW as there is an A/D input on the pins I use for 1-wire ops (an accident, not planned). Measuring this voltage and reporting it is high on my wish list.

All: I am the first to admit that my attempts at RF shielding were stabs in the dark. Mainly all I did was accommodate ferrite beads on all signals in and out of the PCB. If you put the PCB in a decently shielded box (display makes this a bit difficult), hopefully you are well covered. Russes and my setups are fairly benign in this area (high RF), so we haven't stressed things much.

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

40. [wxsig] RE: Bad weather data

From: "William Beals" <will@beals5.com>
Date: Wed, 20 Dec 2000 21:36:46 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125662-2000.12.20-22.47.04--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug:

I like the idea of reporting error counters every once in a while, that
would be useful data. I'm building a separate module for the debug stuff,
so it is quite possible it could end up growing be quite large. As you
point out, just need the time to add it all.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Doug
Sent: Wednesday, December 20, 2000 5:06 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] RE: Bad weather data

I also agree to have some way to track other important items on the wx
board. I was thinking it
would be nice to send the error counter values once a day, maybe a few
digital input points. It so
easy to think of
these things when you don't have to code it!!!! A many thanks for all you
hard efforts on this
project Will.
Happy Holidays

Doug K0DSP

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

41. [wxsig] RE: Weather Stations data protocol

From: "Rodrigo Sequeira Matias" <rsmatias@teleweb.pt>
Date: Fri, 22 Dec 2000 02:53:10 -0000
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-125873-2000.12.22-13.30.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William,

        Sorry about the delay on my answer, but thanks a lot for your
attention. I will read carefully the latest APRS protocol and see Peet
homepage too.

Best regards,

Rodrigo Matias (CT1GQU)

-----Original Message-----
From: William Beals <will@beals5.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Date: Terça-feira, 21 de Novembro de 2000 3:37
Subject: [wxsig] RE: Weather Stations data protocol

>Rodrigo:
>

>On the TAPR website go to the APRS pages and you will find the latest APRS
>protocol spec. Read that and all shall be revealed. (or at least a lot
will
>be revealed anyway) I followed two of the protocols in there, the
>positioned and positionless protocol. I also used the Peet protocol and
>that is covered on Peets website.
>
>will
>
>-----Original Message-----
>From: bounce-wxsig-15707@lists.tapr.org
>[mailto:bounce-wxsig-15707@lists.tapr.org]On Behalf Of Rodrigo Sequeira
>Matias
>Sent: Monday, November 20, 2000 9:42 AM
>To: TAPR WX Special Interest Group
>Subject: [wxsig] Weather Stations data protocol
>
>
>
>   Can anybody tell me if there is a standard on Weather stations data
>protocol I can get to try developing my own software to decode some weather
>data from those common weather stations.
>
>Rodrigo
>
>
>
>---
>You are currently subscribed to wxsig as: wmbeals@compuserve.com
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
>---
>You are currently subscribed to wxsig as: rsmatias@alunos.isel.pt
>To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

42. [wxsig] -68 problem found! (hopefully)

From: "William Beals" <will@beals5.com>
Date: Mon, 25 Dec 2000 18:12:26 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126246-2000.12.25-19.22.37--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

I am pretty certain I have found the source of the "-68" problem! When I
did the math converting -68 to my internal representation I didn't do the
rounding right and assumed it was a value of 0x00. After some comments from
Russ I went back and carefully checked that assumption. -68 is actually
represented by 0xff the way I store it internally. That happens to be the
result of my division routine when I try to divide by 0. That happens
during the corner case where I try to calculate my averaged values and there
have been NO good readings for the past five minutes. Russ put me on the
trail of this when his analysis of his home system turned out to be a wire
that had frayed and was intermittent. This should have resulted in no data,
but I didn't take care of that corner case.

This also can explain why sometimes the 99MPH showed up with the -68's, if
the bus was broke, I was doing the same division by 0 and getting a BIG
number. It also explains Russes observation that the wind direction
sometimes ended up being precise multiples of 22.5 degrees, with a wind
direction array of all 0's, I never got a non-0 count in my histogram and
picked a random value. When I calculated the weighted sum of an empty
array, it ended up always being 0 plus that random "22.5" number. I've
fixed that random part too.

This is of course all theory, but it so nicely ties everything together that
it almost must be true.

Part of the reason I didn't do the checking for 0 readings (besides lack of
good programming practice) is that I do check to see if the bus is alive
before going into weather mode and refuse to enter weather gathering mode if

I see no devices at all. In Russes case, the connection was intermittent so
he got into weather mode OK, but afterwards he got into situations where he
had a full five minutes of no data. The supposed correlation to sub-zero
temperatures must have had something to do with shrinking cable making the
connection less likely to be made.

The fixes of course are simple, check for 0 before dividing! The fixes will
be in the 1.11.0 release. I am in the middle of adding the debug code
though, so the release is not quite ready. Alas the debug stuff has some
features that only happen every hour, so testing all the combinations and
permutations of features is a lengthy process.

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

43. [wxsig] Re: -68 problem found! (hopefully)

From: John Koster <w9ddd@tapr.org>
Date: Mon, 25 Dec 2000 19:23:15 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126249-2000.12.25-19.35.22--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Snipped -- lots of good rationale.

> fixed that random part too.
>
> This is of course all theory, but it so nicely ties everything together that
> it almost must be true.
>

Gee, you've never met Mr. Murphy? :-)

Sorry couldn't help it. Too much turkey has warped my senses.

JK

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

44. [wxsig] board layouts

From: John Koster <w9ddd@tapr.org>
Date: Mon, 25 Dec 2000 22:39:54 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "TAPR.ORG System Management" <tapr-sys@lists.tapr.org>
Message-ID: <LYR15067-126266-2000.12.25-22.52.02--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I've tried twice now to send the board layout PDF's and lyris keeps
telling me it won't send it because it has the same first list as a
previous message. It then proceeds to quote the previous message that I
sent the schematic sheets in. Not the same no how no way.

Perhaps it's really puking on the basis of my trying to send too many
attachements to the list. We're talking about two messages slightly over
100K each.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==========
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

45. [wxsig] RE: board layouts

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Tue, 26 Dec 2000 09:09:12 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Cc: "TAPR.ORG System Management" <tapr-sys@lists.tapr.org>
Message-ID: <LYR15067-126300-2000.12.26-08.21.13--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This Lyris software is a piece of crap, it has been trouble since day
one that I have been on these lists (Feb 1999). I had to subscribe as
many as three or four times to finally get subscribed ... for some lists
... for this list I had to get Steve to subscribe me cause each of my
tries for some reason didn' take ... phooey! Why don't they use
majordomo or some decent list manager software. Hell, even eGroups is
better than Lyris.

> -----Original Message-----
> From: John Koster
> Sent: Monday, December 25, 2000 23:40 PM

> I've tried twice now to send the board layout PDF's and lyris keeps
> telling me it won't send it because it has the same first list as a
> previous message. It then proceeds to quote the previous
> message that I sent the schematic sheets in. Not the same no how
> no way.
>
> Perhaps it's really puking on the basis of my trying to send too many
> attachements to the list. We're talking about two messages
> slightly over 100K each.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

46. [wxsig] RE: board layouts

From: John Koster <w9ddd@tapr.org>
Date: Tue, 26 Dec 2000 08:32:52 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126309-2000.12.26-08.44.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Opps, I posted to the wrong list. I wouldn't post such large attachments
to this list, so hopefully when I try again this morning, I will type the
correct list name.

Sorry for the mix up.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Tue, 26 Dec 2000, Brian B. Riley wrote:

>
> This Lyris software is a piece of crap, it has been trouble since day
> one that I have been on these lists (Feb 1999). I had to subscribe as
> many as three or four times to finally get subscribed ... for some lists
> ... for this list I had to get Steve to subscribe me cause each of my
> tries for some reason didn' take ... phooey! Why don't they use
> majordomo or some decent list manager software. Hell, even eGroups is
> better than Lyris.
>
>
> > -----Original Message-----
> > From: John Koster
> > Sent: Monday, December 25, 2000 23:40 PM

>
>
> > I've tried twice now to send the board layout PDF's and lyris keeps
> > telling me it won't send it because it has the same first list as a
> > previous message. It then proceeds to quote the previous
> > message that I sent the schematic sheets in. Not the same no how
> > no way.
> >
> > Perhaps it's really puking on the basis of my trying to send too many
> > attachements to the list. We're talking about two messages
> > slightly over 100K each.
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

47. [wxsig] 1.11.0 Release

From: "William Beals" <will@beals5.com>
Date: Tue, 26 Dec 2000 10:18:50 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126330-2000.12.26-11.29.01--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

The 1.11.0 release is up on the website
(http://www.beals5.com/wx/dloads.htm). This is a pretty major release for
two reasons. First is that I am pretty sure I finally fixed that pesky -68
degree issue that has been bugging me (yesterdays email is all the gory
details). The other reason is two debug features I am certain will be very
handy for everyone.

I now have the ability to measure and report the 1-wire bus voltage. It
turns out that by luck the micro's A/D inputs use the same pins I picked for
the 1-wire bus control pins. I added some code where I switch one of the
pins from digital I/O to an A/D input and convert the bus voltage. I
display the voltage on the "status" screen where it gets updated every 5
seconds. When helping folk debug flaky systems I am always asking what the
bus voltage is, now the T238 can tell you directly and also measure when it
knows the bus is quiet.

I have added debug message support as well. There are currently two message
types, SW version and error counter+bus voltage. See
http://www.beals5.com/wx/status.htm and select "debug messages" for full
descriptions.

I also fixed a few other bugs too. Biggest one was a bug where I would quit
reporting wind speed for an indeterminate amount of time if the 1-wire bus
got completely reset as well as the blank screen during UART settings.

BTW: With this release I finally passed 10,000 lines of code!

will

==
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

48. [wxsig] Re: 1.11.0 Release

From: "Russ Chadwick" <crb5@qwest.net>
Date: Tue, 26 Dec 2000 23:09:08 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126396-2000.12.27-00.21.47--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I downloaded the new version of the software, 1-11-0.s19, and have it working. One thing that caused some difficulty is that the baud rate was set to 2400 and it took me a while to figure out why no data packets were coming out of the TNC. After I set the baud rate back to 4800, things worked fine.

Russ

----- Original Message -----
From: William Beals <will@beals5.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Tuesday, December 26, 2000 10:18 AM
Subject: [wxsig] 1.11.0 Release

> Folks:
>
> The 1.11.0 release is up on the website
> (http://www.beals5.com/wx/dloads.htm). This is a pretty major release for
> two reasons. First is that I am pretty sure I finally fixed that
pesky -68
> degree issue that has been bugging me (yesterdays email is all the gory
> details). The other reason is two debug features I am certain will be
very
> handy for everyone.
>
> I now have the ability to measure and report the 1-wire bus voltage. It
> turns out that by luck the micro's A/D inputs use the same pins I picked
for
> the 1-wire bus control pins. I added some code where I switch one of the
> pins from digital I/O to an A/D input and convert the bus voltage. I
> display the voltage on the "status" screen where it gets updated every 5
> seconds. When helping folk debug flaky systems I am always asking what
the
> bus voltage is, now the T238 can tell you directly and also measure when
it
> knows the bus is quiet.
>
> I have added debug message support as well. There are currently two
message
> types, SW version and error counter+bus voltage. See
> http://www.beals5.com/wx/status.htm and select "debug messages" for full
> descriptions.
>
> I also fixed a few other bugs too. Biggest one was a bug where I would
quit
> reporting wind speed for an indeterminate amount of time if the 1-wire bus
> got completely reset as well as the blank screen during UART settings.
>
> BTW: With this release I finally passed 10,000 lines of code!
>
> will
>
> ==========
> This message sent using 100% recycled electrons.
> (minimum 30% post-consumer)
> ==========
> Will Beals
> 15014 East Idaho Place
> Aurora, CO 80012
> 303-755-0293
> will@beals5.com
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

49. [wxsig] Re: 1.11.0 Release

From: "Clay Bartholow" <w0led@arrl.net>
Date: Wed, 27 Dec 2000 8:2:1
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126409-2000.12.27-08.14.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Congratulations Will on the 10 KLOC achievement ;o)

I tried to download the new source code and keep getting a file not found
error.

Thannks!

Clay Bartholow W0LED

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

50. [wxsig] Re: 1.11.0 Release

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Wed, 27 Dec 2000 09:07:03 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126421-2000.12.27-09.18.59--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Oops, now I know why my station is off the air as well. I will fix that tonight.

Rich - Wn0x

>>> crb5@qwest.net 12/27/00 12:09AM >>>
I downloaded the new version of the software, 1-11-0.s19, and have it
working. One thing that caused some difficulty is that the baud rate was
set to 2400 and it took me a while to figure out why no data packets were
coming out of the TNC. After I set the baud rate back to 4800, things
worked fine.

Russ

----- Original Message -----
From: William Beals <will@beals5.com>
To: TAPR WX Special Interest Group <wxsig@lists.tapr.org>
Sent: Tuesday, December 26, 2000 10:18 AM
Subject: [wxsig] 1.11.0 Release

> Folks:
>
> The 1.11.0 release is up on the website
> (http://www.beals5.com/wx/dloads.htm). This is a pretty major release for
> two reasons. First is that I am pretty sure I finally fixed that
pesky -68
> degree issue that has been bugging me (yesterdays email is all the gory
> details). The other reason is two debug features I am certain will be
very
> handy for everyone.
>
> I now have the ability to measure and report the 1-wire bus voltage. It
> turns out that by luck the micro's A/D inputs use the same pins I picked
for
> the 1-wire bus control pins. I added some code where I switch one of the
> pins from digital I/O to an A/D input and convert the bus voltage. I
> display the voltage on the "status" screen where it gets updated every 5
> seconds. When helping folk debug flaky systems I am always asking what
the
> bus voltage is, now the T238 can tell you directly and also measure when
it
> knows the bus is quiet.
>
> I have added debug message support as well. There are currently two
message
> types, SW version and error counter+bus voltage. See
> http://www.beals5.com/wx/status.htm and select "debug messages" for full
> descriptions.
>
> I also fixed a few other bugs too. Biggest one was a bug where I would
quit

> reporting wind speed for an indeterminate amount of time if the 1-wire bus
> got completely reset as well as the blank screen during UART settings.
>
> BTW: With this release I finally passed 10,000 lines of code!
>
> will
>
> ==========
> This message sent using 100% recycled electrons.
> (minimum 30% post-consumer)
> ==========
> Will Beals
> 15014 East Idaho Place
> Aurora, CO 80012
> 303-755-0293
> will@beals5.com
>
>
> ---
> You are currently subscribed to wxsig as: crb5@uswest.net
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

51. [wxsig] Re: 1.11.0 Release

From: "William Beals" <will@beals5.com>
Date: Wed, 27 Dec 2000 19:08:07 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126562-2000.12.27-20.18.05--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Clay:

You will need to explain "10 KLOC", sorry.

Thanks for the heads-up on the source code. Somehow the filename got
converted to upper case which is fine when I test at home, but dies on the
unix server. Fixed now.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Clay Bartholow
Sent: Wednesday, December 27, 2000 12:00 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1.11.0 Release

Congratulations Will on the 10 KLOC achievement ;o)

I tried to download the new source code and keep getting a file not found
error.

Thannks!

Clay Bartholow W0LED

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

52. [wxsig] Re: 1.11.0 Release <-- meaning of KLOC

From: "Aaron" <ae4ko@amsat.org>
Date: Thu, 28 Dec 2000 08:50:44 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126671-2000.12.28-08.00.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 27 Dec 2000, at 19:08, William Beals wrote:

> Clay:
>
> You will need to explain "10 KLOC", sorry.
>

10K (as in Thousand) Lines of Code

Fokelore has it that IBM used to pay their programmers by the
KLOC. It's a real stupid way to pay programmers if you ask me so
I kinda doubt it was actually true, but Steve Balmer (of Microsoft
fame) used to talk about it relating to their early involvement with
OS/2.

Aaron

(Random Quote)
Socks are natural cat toys. If you put them on, that is.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

53. [wxsig] Re: 1.11.0 Release

From: "Rich Beckwith" <Rich@dps.state.mo.us>
Date: Thu, 28 Dec 2000 08:56:29 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126687-2000.12.28-09.08.39--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will, thanks for adding the 1200/9600 baud support. This will let me use some of my old TNC's that don't support 4800 baud. I have reset the TNC now and you should be getting your debug data.

Here is something else I would like for you to throw in the request pile. How about the ability to automatically send wx data when certain presets are reached, sort of a Wx alarm function. I wouldn't change the data format, just send a posit based on current readings when say, wind speed exceeds a certain amount. Just an idea.

Rich - Wn0x

>>> will@beals5.com 12/27/00 08:08PM >>>
Clay:

You will need to explain "10 KLOC", sorry.

Thanks for the heads-up on the source code. Somehow the filename got
converted to upper case which is fine when I test at home, but dies on the
unix server. Fixed now.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Clay Bartholow
Sent: Wednesday, December 27, 2000 12:00 AM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: 1.11.0 Release

Congratulations Will on the 10 KLOC achievement ;o)

I tried to download the new source code and keep getting a file not found
error.

Thannks!

Clay Bartholow W0LED

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: rich@dps.state.mo.us
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

54. [wxsig] Re: 1.11.0 Release

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Thu, 28 Dec 2000 10:25:51 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126693-2000.12.28-09.38.17--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: Rich Beckwith
> Sent: Thursday, December 28, 2000 9:56 AM

[snip]

> Here is something else I would like for you to throw in the
> request pile. How about the ability to automatically send wx
> data when certain presets are reached, sort of a Wx alarm
> function. I wouldn't change the data format, just send a
> posit based on current readings when say, wind speed exceeds
> a certain amount. Just an idea.

I second the idea ... how about adding an 'alarm' flag to the debug data and then set the alarm flag and send the debug frame instead of the standard frame ????

OK , that's my sane idea ... now here's my, shall we say, a little more far fetched, idea ... using APRS messaging protocol have the 'alarm' condition send a warning message to the call holder of the WX station ... lots of us here with D7s/D700s .... just a thought ... a message frame is trivial to construct.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

55. [wxsig] Re: 1.11.0 Release

From: "Clay Bartholow" <w0led@arrl.net>
Date: Thu, 28 Dec 2000 16:33:35
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126803-2000.12.28-16.45.48--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,
  Like Aaron said...

  I have this image of an interview with Steve Ballmer in which he describes the early days of Microsoft writing code for the IBM PC platform (actually it was near the end of those early days.) Ballmer is beating his chest like Tarzan and shouting "K-LOCS, K-LOCS!" (KAY-LOCKS)in his never-too-subtle attempt to describe the way that IBM execs saw the issue of program development and payment for same.

Clay

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

56. [wxsig] Waaaah!

From: "Clay Bartholow" <w0led@arrl.net>
Date: Thu, 28 Dec 2000 16:43:30
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126810-2000.12.28-16.55.45--lyris.wxsig#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Well, I just finished my T238 and it works great. But now that Minnesota
is in the midst of a(nother) winter storm I realize that the next step is
to repeat the calibration I did under TMEX (and that's been running all
summer and fall.) It seems to me this has been answered earlier but I'm
too lazy to go back and look it up. Is there an alternative to going up on
my slippery garage roof and doing the calibration or am I jusy going to
have to wait for that fabled January thaw? ;o)

Clay B. W0LED

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

57. [wxsig] Alarm messages

From: "William Beals" <will@beals5.com>
Date: Thu, 28 Dec 2000 19:21:33 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126830-2000.12.28-21.10.43--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

General question on alarms: Given that data gets sent every 5 minutes,
would there be much advantage to getting a message a few minutes sooner?
Hopefully you'd know within five minutes at the latest.

The idea of sending a targeted alarm message sounds interesting...

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

58. [wxsig] RE: Waaaah!

From: "William Beals" <will@beals5.com>
Date: Thu, 28 Dec 2000 19:21:41 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126831-2000.12.28-21.10.45--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Clay:

If you update the code using the MON08 program, none of your settings will
be lost. You only lose your settings if you reload the code using the
Motorola tools which need to completely erase the flash before
reprogramming. The MON08 programs (one each in the micro and the PC) are
smart enough to only erase the application data and leave the monitor and
user data alone. It's something I'm particularly proud of and it seems to
mostly work. Even if you use the Motorola tools (like I do), there are
instructions in the file wireids.asm that explain how to extract your flash
data from the micro and manually insert it into that file so they get
reprogrammed correctly each time.

A WORD OF WARNING IF YOU HAVE NEVER DONE IT BEFORE: MON08 is a DOS
application that does not work in a DOS shell under windows. You must
reboot your computer into pure DOS mode to run this application.
Regrettably I am not a windows app writer, and while there have been a few
offers from folks to write a windows-compatible app for me, they haven't
panned out for one reason or another.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org

[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Clay Bartholow
Sent: Thursday, December 28, 2000 4:44 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Waaaah!

Well, I just finished my T238 and it works great. But now that Minnesota is in the midst of a(nother) winter storm I realize that the next step is to repeat the calibration I did under TMEX (and that's been running all summer and fall.) It seems to me this has been answered earlier but I'm too lazy to go back and look it up. Is there an alternative to going up on my slippery garage roof and doing the calibration or am I jusy going to have to wait for that fabled January thaw? ;o)

Clay B. W0LED

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

59. [wxsig] Re: Alarm messages

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>
Date: Thu, 28 Dec 2000 21:07:40 -0600
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126833-2000.12.28-21.20.03--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

William Beals wrote:
>
> Folks:
>
> General question on alarms: Given that data gets sent every 5 minutes,
> would there be much advantage to getting a message a few minutes sooner?
> Hopefully you'd know within five minutes at the latest.
>
> The idea of sending a targeted alarm message sounds interesting...

>From one perspective, yes. Think something akin to ASOS, where it triggers a message whenever something goes out of dynamic limits, or when there's a precip event (rain starts, rain stops, etc).

I can very easily see an array of these going into service for mesonet applications, etc.

73, gerry
--
Gerry Creager -- gerry@cs.tamu.edu
Network Engineering |Research focusing on
Academy for Advanced Telecommunications |Satellite Geodesy and
and Learning Technologies |Geodetic Control
Texas A&M University 979.458.4020 (Phone) -- 979.847.8578 (Fax)

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

60. [wxsig] RE: Waaaah!

From: "Clay Bartholow" <w0led@arrl.net>
Date: Thu, 28 Dec 2000 21:31:59
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126834-2000.12.28-21.44.10--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,
I think you misunderstood me. I have never had my T238 connected to the wx station so there are no initialized values in flash. What I'm wondering is if there isn't a way to use the values that were collected by the DalSemi TMEX software (which I _have_ run on the wx station) and load them into flash and skip the normal calibration step. I read the comments in the wireids.asm and I'm still thinking about what I read and how that relates to my problem. (Sometimes I'm a bit thick.) I did go back to early September and re-read the WXSIG digests and found where Rick Hampton said something about documenting a procedure that sounds like what I'm looking for. But I couldn't find anything more on the subject. Maybe I'll

send him an email directly...

  BTW, I did load the 1-11-0 hex into the T238 without (much) problem and
it has recognized the DS1994 that I added. I couldn't get the monitor
signon to come up following the procedures but found that (sometimes) if I
held UP/DOWN switches closed and cycled RESET I could get the banner. I
gambled and started MON08 (in DOS) and found that _it_ prompted me to cycle
power with UP/DOWN closed. I did that, still saw no monitor signon but
MON08 started doing it's thing and everything seems OK so far.

Clay W0LED

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

61. [wxsig] Re: Alarm messages

From: "Mykle Raymond" <mykle@gci-net.com>
Date: Fri, 29 Dec 2000 08:33:49 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126913-2000.12.29-09.43.38--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"William Beals" wrote:
> Given that data gets sent every 5 minutes, would there be
> much advantage to getting a message a few minutes sooner?

If presets are used, data can be regularly transmitted at a much
longer interval, like 30 minutes or more. When any of the presets
are triggered by a parameter changing enough, data gets sent
immediately and the timer resets (rather than simply "filling-in").

This would be much better from a network congestion point of
view!

Individual data samples may contain spikes that would not be
appropriate to trigger a data transmission, but I suspect that
there are short-term averaged values available to use instead.

Pardon any redundancy here, I joined the list yesterday.
Must be an interesting list if I find something to contribute to,
let alone on the first day of watching!

73 de Mykle N7JZT

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

62. [wxsig] RE: Waaaah!

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 29 Dec 2000 10:33:58 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-126914-2000.12.29-09.46.19--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> -----Original Message-----
> From: Clay Bartholow
> Sent: Thursday, December 28, 2000 21:32 PM
>
> Will,
>   I think you misunderstood me. I have never had my T238
> connected to the wx station so there are no initialized
> values in flash. What I'm wondering is if there isn't a way
> to use the values that were collected by the DalSemi TMEX
> software (which I _have_ run on the wx station) and load
> them into flash and skip the normal calibration step. I
> read the comments in the wireids.asm and I'm still thinking
> about what I read and how that relates to my problem.
> (Sometimes I'm a bit thick.) I did go back to early
> September and re-read the WXSIG digests and found
> where Rick Hampton said something about documenting a
> procedure that sounds like what I'm looking for. But I
> couldn't find anything more on the subject. Maybe I'll
> send him an email directly...

I too am interested in this, but in REVERSE. Is there some way I can download the WireIDs from the T-238 and the create a WireID file for the DalSemi TMEX software ??? I forgot to run the setup with the DalSemi first so that software is useless to me unsless I feel like doing calibration by going up the tower in winter to do it ... sigh.

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

63. [wxsig] Alarm Messages

From: "William Beals" <will@beals5.com>
Date: Fri, 29 Dec 2000 20:20:13 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127009-2000.12.29-21.30.16--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

OK on Alarms. I'll add it to the wish list.

Mykle: Welcome to the list. We are already pretty big on averaged data and fully agree that single sample points are pretty much useless. It's one of the things we think is pretty cool about the T238 versus most of the commercial weather stations, we only broadcast averaged data.

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

64. [wxsig] Transferring Dallas IDs to T238

From: "William Beals" <will@beals5.com>
Date: Fri, 29 Dec 2000 20:20:15 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127010-2000.12.29-21.30.18--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Clay:

Oops, sorry for misunderstanding the question. You are right this was asked a while back. I don't remember a definitive answer either. If you find out, please post it. It would be something good to add to the comments in the wireids.asm file for future (easier) reference.

Alas I have never used the Dallas software, so I don't know its features or how it stores IDs. When asked before my general response was that if there is a simple list of IDs it should be pretty obvious how to transfer all the IDs except wind direction as they are all pretty unique or easily determined using the Dallas Ibutton viewer. Wind direction is tricky as you will need to know the order they store them in and how they tag which ID (or pair) is considered North.

Good luck.

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293

will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

65. [wxsig] Russ's JPEG file (take two)

From: "William Beals" <will@beals5.com>
Date: Fri, 29 Dec 2000 20:20:56 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127011-2000.12.29-21.31.55--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

My first attempt at reposting failed, the file was 101K with a 100K limit.
Reduced the picture size.

will

-----Original Message-----

Brian:

I got Russ's attachment as text as well--weird, it normally works just fine.
I cut it and pasted it into a file and dropped it into WinZip which
converted it. I'll include it in hopes it works from me.

Make sure to try and isolate the problem first, I'd hate for you to remove
that diode only to find out that the problem was in the rain gauge or
something.

will

==
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com
[Attachment: supp_diode.JPG; application/octet-stream; 28,789 bytes]

66. [wxsig] 1.11.0 Release -- uh oh!!!!

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Fri, 29 Dec 2000 23:59:04 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127029-2000.12.29-23.11.24--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was just getting ready to shut down the computer for the night and
checked the N1BQ-3 web display from Findu and it was showing simply a 1
degree F display withnow wind info 11 minutes old. I stood up and looked
at the controller and it was showing 1 mph with a max interval gust of 1
mph and max daily gust of 8 mph, then as I watched it, it registered a
+68 which immediately got transferred to the two max gust displays. That
cannot be right ... If the wind is running anything over 20 mph here, I
KNOW IT!!!! The sounds aren't there .... what next??????

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

67. [wxsig] RE: 1.11.0 Release -- uh oh!!!!

From: "William Beals" <will@beals5.com>
Date: Sat, 30 Dec 2000 09:02:53 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127128-2000.12.30-10.13.07--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian:

The latest diagnostic data I got from Russ this morning still shows that
your bus voltage is below spec. Until that problem gets fixed NOTHING is

guaranteed to work at all, much less work reliably. You need to isolate the part that is corrupting the 1-wire bus and fix it before it makes sense to peruse any other avenues. Russ and I have direct personal experience with temperature sensors that do not behave reliably if not given an adequate supply voltage, basically the A/D converter screws up.

Regrettably the problem (or problems) look like they are at the sensor unit. There is nothing more to to inside. You will need to bring the sensor unit inside and start the trouble-shooting Russ and I have been suggesting. After you get the problems isolated, I strongly suggest you let the unit run for several days inside to make sure it works reliably, then a few more days at an easily accessible outside location before finally going to the top of your roof.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of Brian B. Riley
Sent: Friday, December 29, 2000 9:59 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] 1.11.0 Release -- uh oh!!!!

I was just getting ready to shut down the computer for the night and checked the N1BQ-3 web display from Findu and it was showing simply a 1 degree F display withnow wind info 11 minutes old. I stood up and looked at the controller and it was showing 1 mph with a max interval gust of 1 mph and max daily gust of 8 mph, then as I watched it, it registered a +68 which immediately got transferred to the two max gust displays. That cannot be right ... If the wind is running anything over 20 mph here, I KNOW IT!!!! The sounds aren't there .... what next??????

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

68. [wxsig] Wind Sensor Setup Without Physical Access

From: "Clay Bartholow" <w0led@arrl.net>
Date: Sat, 30 Dec 2000 11:37:34
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127142-2000.12.30-11.50.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,

   I have put up a sort of long-winded, twisting (twisted) treatise on my experiences setting up my T238 without doing the standard "physical access" setup. I'd post it here but it's kinda long. The URL is:

   http://www.state.net/clay.bartholow/amateurradio.htm#treatise

   I'd appreciate it if you could briefly review it, if you get the chance, and let me know if there are any glaring errors.

   When I was doing this I ran across a question regarding the fwdoff variable. I discuss this in my "mini-epic" and the issue is basically that I'm making a wild guess about how that variable works. I guessed that the least significant nibble represented a value 0 through 15 that you use to point to a direction offset relative to the first wind sensor in the id list. I'm not sure I'm stating this very well. I couldn't find anything in the source code that helped me understand how this offset is applied (I probably just missed it 'cuz I found your commenting most excellent) so I made another wild guess, set it at 0, and set my list of wind direction sensor ids up so that the most northerly one was first in the list and worked clockwise from there. It seems to work but I'd feel more warm 'n' fuzzy if I knew for sure.

   This led me to a wish. Might it be possible to "tweak" this offset value through a menu option? I picture something like:

    CCW 30

```
    CCW 15
   *NORTH
    CW 15
    CW 30

   Pressing UP or DOWN would allow you to move the asterisk up and down
through the list; SELECT locks in your choice.  This would allow a
post-installation fine tuning of the offset in case you had some small
error to resolve.  I know that, in my case, trying to reach up as high as I
could to mount the wx station on an existing antenna mast at the peak of
the garage, place the U-clamp, tighten nuts, etc., (and with my third
hand...) I did not end up with the wx station aligned to NORTH as well as
the assumed NORTH used when calibrating the wx station in the garage under
the DalSemi software.  I got lucky because when everything was in place I
realized that, as mounted, the NORTH sensor was aligned with TRUE NORTH...
but, like I said, that was luck.  It's also my guess that a lot of these wx
stations are aligned to magnetic north (or maybe just approximately north)
rather than true north.  Something like this would allow you to tweak the
sensor offset to get alignment as close to TRUE NORTH as possible from a
more stable position.

   Anyway, that's my wish (remember there are only 20 shopping days left
till my birthday.)  ;o)

Clay W0LED

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

69. [wxsig] Try this

```
From: "Clay Bartholow" <w0led@arrl.net>
Date: Sat, 30 Dec 2000 12:6:12
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127147-2000.12.30-12.19.06--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Will,
  i'm not sure what my problem is but this URL will take you right to the
document instead of to the top of my web page:

    http://www.state.net/clay.bartholow/t238_treatise.htm

Clay W0LED

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

70. [wxsig] RE: Waaaah!

```
From: "Clay Bartholow" <w0led@arrl.net>
Date: Sat, 30 Dec 2000 16:41:32
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127180-2000.12.30-16.53.50--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brian,

   You may find enough information in the piece I just wrote explaining my
oddysey.  Basically, you should be able to get a dump of flash memory
(starting at f800) from your processor using the P&E programming tools
(once you get past the security.)  Then, with the source code for
wireids.asm (part of the T238 source package) you can reasonably extract
the sensor ids and create an ini.txt file that the DalSemi application
should recognize (remember, this is only a hypothesis -- I haven't actually
tried it.)  This is all explained, in a roundabout way, at the URL I
referenced in the message I left here today (12-30-2000.)  Of course, since
you are going about this from the opposite direction, you should apply the
appropriate inverse logic  (o;

Clay W0LED

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
```

71. [wxsig] RE: Wind Sensor Setup Without Physical Access

From: "Brian B. Riley" <brianbr@wulfden.org>
Date: Sat, 30 Dec 2000 19:01:38 -0500
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127215-2000.12.30-18.13.58--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This would be a great idea ....

> -----Original Message-----
> From: bounce-wxsig-15705@lists.tapr.org
> [mailto:bounce-wxsig-15705@lists.tapr.org]On Behalf Of Clay Bartholow
> Sent: Saturday, December 30, 2000 11:38 AM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Wind Sensor Setup Without Physical Access
>
>
> Will,
>
>   I have put up a sort of long-winded, twisting (twisted)
> treatise on my
> experiences setting up my T238 without doing the standard
> "physical access"
> setup. I'd post it here but it's kinda long. The URL is:
>
>   http://www.state.net/clay.bartholow/amateurradio.htm#treatise
>
>   I'd appreciate it if you could briefly review it, if you
> get the chance,
> and let me know if there are any glaring errors.
>
>   When I was doing this I ran across a question regarding the fwdoff
> variable. I discuss this in my "mini-epic" and the issue is
> basically that
> I'm making a wild guess about how that variable works. I
> guessed that the
> least significant nibble represented a value 0 through 15
> that you use to
> point to a direction offset relative to the first wind sensor
> in the id
> list. I'm not sure I'm stating this very well. I couldn't
> find anything
> in the source code that helped me understand how this offset
> is applied (I
> probably just missed it 'cuz I found your commenting most
> excellent) so I
> made another wild guess, set it at 0, and set my list of wind
> direction
> sensor ids up so that the most northerly one was first in the
> list and
> worked clockwise from there. It seems to work but I'd feel
> more warm 'n'
> fuzzy if I knew for sure.
>
>   This led me to a wish. Might it be possible to "tweak"
> this offset
> value through a menu option? I picture something like:
>
>   CCW 30
>   CCW 15
>   *NORTH
>   CW 15
>   CW 30
>
>   Pressing UP or DOWN would allow you to move the asterisk
> up and down
> through the list; SELECT locks in your choice. This would allow a
> post-installation fine tuning of the offset in case you had
> some small
> error to resolve. I know that, in my case, trying to reach
> up as high as I
> could to mount the wx station on an existing antenna mast at
> the peak of
> the garage, place the U-clamp, tighten nuts, etc., (and with my third
> hand...) I did not end up with the wx station aligned to
> NORTH as well as
> the assumed NORTH used when calibrating the wx station in the
> garage under
> the DalSemi software. I got lucky because when everything
> was in place I
> realized that, as mounted, the NORTH sensor was aligned with

> TRUE NORTH...
> but, like I said, that was luck. It's also my guess that a
> lot of these wx
> stations are aligned to magnetic north (or maybe just
> approximately north)
> rather than true north. Something like this would allow you
> to tweak the
> sensor offset to get alignment as close to TRUE NORTH as
> possible from a
> more stable position.
>
>   Anyway, that's my wish (remember there are only 20
> shopping days left
> till my birthday.) ;o)
>
> Clay W0LED
>
> ---
> You are currently subscribed to wxsig as: ka2bqe@amsat.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

72. [wxsig] Transferring IDs to/from the Dallas program

From: "William Beals" <will@beals5.com>
Date: Sat, 30 Dec 2000 20:17:58 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127262-2000.12.30-21.27.53--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Clay:

Thanks for figuring that out, that will make quite a few folk happy. Gimme
a day or two to look over it and if I have any questions, I'll ask.

I must admit that the comments surrounding fwdoff may be lean because I kind
of came across it's implementation by trial and error, not pure theory. You
are correct that it is a 4-bit variable (4 MSBs are don't cares). I'll take
a look at that and will also enhance my comments around that variable, I'm
sure it needs it.

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

73. [wxsig] New MON08 Soon

From: "William Beals" <will@beals5.com>
Date: Sat, 30 Dec 2000 20:17:59 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127263-2000.12.30-21.28.09--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks:

Turns out that on an unrelated project I *HAD* to solve the problem of
getting my simple DOS UART routines to run in a DOS window. I managed to
solve it, so there will likely be a new version of MON08 soon that will not
require you to reboot in pure DOS mode.

This was getting more important on my end as my new laptop with Windows ME
no longer has pure DOS mode anymore, I had to boot from a floppy to get

it--yeach.

will

==========
This message sent using 100% recycled electrons.
(minimum 30% post-consumer)
==========
Will Beals
15014 East Idaho Place
Aurora, CO 80012
303-755-0293
will@beals5.com

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

74. [wxsig] Re: New MON08 Soon

From: John Koster <w9ddd@tapr.org>
Date: Sat, 30 Dec 2000 22:40:22 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127272-2000.12.30-22.52.40--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I don't suppose this will help an existing DOS program that I don't have
source for will it? I have this same problem on a limited basis. I
solved it was making the lapton dual boot, with a partition that had
DOS6.22 on it. However I understand I will be getting a new laptop
shortly and don't really want to mess with it. They are getting real
fussy about user installed programs on company PCs, putting a second OS on
it would probably run off the richter (SP?) scale if they knew.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==========
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Sat, 30 Dec 2000, William Beals wrote:

> Folks:
>
> Turns out that on an unrelated project I *HAD* to solve the problem of
> getting my simple DOS UART routines to run in a DOS window. I managed to
> solve it, so there will likely be a new version of MON08 soon that will not
> require you to reboot in pure DOS mode.
>
> This was getting more important on my end as my new laptop with Windows ME
> no longer has pure DOS mode anymore, I had to boot from a floppy to get
> it--yeach.
>
> will
>
> ==========
> This message sent using 100% recycled electrons.
> (minimum 30% post-consumer)
> ==========
> Will Beals
> 15014 East Idaho Place
> Aurora, CO 80012
> 303-755-0293
> will@beals5.com
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

75. [wxsig] Re: New MON08 Soon

From: "William Beals" <will@beals5.com>
Date: Sun, 31 Dec 2000 09:13:54 -0700
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127317-2000.12.31-10.24.00--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John:

Nope, what I found was a freeware library for Borland C that provided
interrupt-based COM routines for me. I needed to modify my other program
(and soon MON08) to use these calls as my old code talked directly to the
COM port registers.

If your existing code uses the INT14 routines to talk to the UART, there are
some shareware TSR programs out there that stick themselves in between and
provide interrupt-based COM services without the need to modify your code.
If you don't know it already, there is a great site called Simtel
(http://www.simtel.net) that has lots of goodies. Got to DOS, IO utilities,
and peruse the listings for descriptions. Most programs are freeware or at
least shareware.

will

-----Original Message-----
From: bounce-wxsig-21132@lists.tapr.org
[mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of John Koster
Sent: Saturday, December 30, 2000 9:40 PM
To: TAPR WX Special Interest Group
Subject: [wxsig] Re: New MON08 Soon

I don't suppose this will help an existing DOS program that I don't have
source for will it? I have this same problem on a limited basis. I
solved it was making the lapton dual boot, with a partition that had
DOS6.22 on it. However I understand I will be getting a new laptop
shortly and don't really want to mess with it. They are getting real
fussy about user installed programs on company PCs, putting a second OS on
it would probably run off the richter (SP?) scale if they knew.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Sat, 30 Dec 2000, William Beals wrote:

> Folks:
>
> Turns out that on an unrelated project I *HAD* to solve the problem of
> getting my simple DOS UART routines to run in a DOS window. I managed to
> solve it, so there will likely be a new version of MON08 soon that will
not
> require you to reboot in pure DOS mode.
>
> This was getting more important on my end as my new laptop with Windows ME
> no longer has pure DOS mode anymore, I had to boot from a floppy to get
> it--yeach.
>
> will
>
> ==
> This message sent using 100% recycled electrons.
> (minimum 30% post-consumer)
> ==
> Will Beals
> 15014 East Idaho Place
> Aurora, CO 80012
> 303-755-0293
> will@beals5.com
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>

>

You are currently subscribed to wxsig as: will@beals5.com
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

---
You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org

76. [wxsig] Re: New MON08 Soon

From: John Koster <w9ddd@tapr.org>
Date: Sun, 31 Dec 2000 10:42:04 -0600 (CST)
To: "TAPR WX Special Interest Group" <wxsig@lists.tapr.org>
Message-ID: <LYR15067-127320-2000.12.31-10.54.27--lyris.wxsig#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I guess we're getting a little off topic, but sorta related.

I'm not sure if INT14 is used or not. All I know was that at 2400 bps it
was losing characters. The error checking within the program would kill
the connection after a certain number of errors. This was a fairly
specialized program designed only to talk to some energy monitoring panels
at remote sites. Tight handshaking e. g. match serial number of boxes or
no comm.

I haven't been to simtel in years. I sort of figured they had gone the
way of CPM (my searches for Z80 code lead me there).

John Koster, W9DDD
<w9ddd@tapr.org>

  ==
None of the above represents the opinion or policy of anyone or any entity
other than John Koster unless expressly so stated above.

On Sun, 31 Dec 2000, William Beals wrote:

> John:
>
> Nope, what I found was a freeware library for Borland C that provided
> interrupt-based COM routines for me. I needed to modify my other program
> (and soon MON08) to use these calls as my old code talked directly to the
> COM port registers.
>
> If your existing code uses the INT14 routines to talk to the UART, there are
> some shareware TSR programs out there that stick themselves in between and
> provide interrupt-based COM services without the need to modify your code.
> If you don't know it already, there is a great site called Simtel
> (http://www.simtel.net) that has lots of goodies. Got to DOS, IO utilities,
> and peruse the listings for descriptions. Most programs are freeware or at
> least shareware.
>
> will
>
> -----Original Message-----
> From: bounce-wxsig-21132@lists.tapr.org
> [mailto:bounce-wxsig-21132@lists.tapr.org]On Behalf Of John Koster
> Sent: Saturday, December 30, 2000 9:40 PM
> To: TAPR WX Special Interest Group
> Subject: [wxsig] Re: New MON08 Soon
>
>
>
> I don't suppose this will help an existing DOS program that I don't have
> source for will it? I have this same problem on a limited basis. I
> solved it was making the lapton dual boot, with a partition that had
> DOS6.22 on it. However I understand I will be getting a new laptop
> shortly and don't really want to mess with it. They are getting real
> fussy about user installed programs on company PCs, putting a second OS on
> it would probably run off the richter (SP?) scale if they knew.
>
> John Koster, W9DDD
> <w9ddd@tapr.org>
>
>   ==
> None of the above represents the opinion or policy of anyone or any entity

> other than John Koster unless expressly so stated above.
>
> On Sat, 30 Dec 2000, William Beals wrote:
>
> > Folks:
> >
> > Turns out that on an unrelated project I *HAD* to solve the problem of
> > getting my simple DOS UART routines to run in a DOS window. I managed to
> > solve it, so there will likely be a new version of MON08 soon that will
> not
> > require you to reboot in pure DOS mode.
> >
> > This was getting more important on my end as my new laptop with Windows ME
> > no longer has pure DOS mode anymore, I had to boot from a floppy to get
> > it--yeach.
> >
> > will
> >
> > ==
> > This message sent using 100% recycled electrons.
> > (minimum 30% post-consumer)
> > ==
> > Will Beals
> > 15014 East Idaho Place
> > Aurora, CO 80012
> > 303-755-0293
> > will@beals5.com
> >
> >
> > ---
> > You are currently subscribed to wxsig as: w9ddd@tapr.org
> > To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to wxsig as: will@beals5.com
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>
> ---
> You are currently subscribed to wxsig as: w9ddd@tapr.org
> To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org
>
>

You are currently subscribed to wxsig as: lyris.wxsig@tapr.org
To unsubscribe send a blank email to leave-wxsig-15067P@lists.tapr.org